DOCUMENT RESUME

ED 058 825 HE 002 747

AUTHOR	Berger, Alan S.
TITLE	Longitudinal Studies on the Class of 1961: The Graduate Science Students.
INSTITUTION	National Opinion Research Center, Chicago, Ill.
SPONS AGENCY	National Institutes of Health (DHEW), Bethesda, Md.
REPORT NO	R-107
PUB DATE	Jan 67
NOTE	164p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Careers; *Graduate Study; *Higher Education; *Manpower Development; Manpower Utilization; *Science Careers; *Scientific Manpower

ABSTRACT

The outcome of senior plans for graduate study and actual educational behavior during the first few years after college graduation are related in important ways to national manpower resources. In order to estimate and allocate the nation's supply of trained specialists, therefore, one must know not only the size of the college graduating class but also the percentages in various fields who go on to graduate school, the number who complete their degrees, and the length of time of degree work. This report attempts to provide some of this information as related to scientific fields concerned with medical and health-related manpower. The report is organized into four chapters that (1) analyze factors related to patterns of enrollment in graduate school; (2) analyze factors related to the realization of plans for advanced study in the selected science fields; (3) examine the work experiences of those who did not realize their plans for advanced study; and (4) examine the relationship between graduate school experiences and career plans of science students. (HS)

ED 058825

Report No. 107

longitudinal studies on the class of 1961: the graduate science students

by

Alan S. Berger

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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HE012 744

Prepared for the National Institutes of Health under Contract PH 43-64-1156
National Opinion Research Center / UNIVERSITY OF CHICAGO

JANUARY, 1967

LONGITUDINAL STUDIES ON THE CLASS OF 1961:

The Graduate Science Students

by

Alan S. Berger

Prepared for the National Institutes of Health
under Contract PH 43-64-1156

NATIONAL OPINION RESEARCH CENTER
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Report No. 107

January, 1967

PREFACE

This report is one of two prepared by the National Opinion Research Center for the Resources Analysis Branch of the National Institutes of Health. Each deal with fields of particular relevance to persons interested in the supply of manpower for health and the health-related sciences.[1] Since advanced training is so important for workers in these fields, both reports are concerned with graduate study. This one deals with actual enrollment in graduate school, the realization of plans for enrollment, and the anticipated career activities of graduate students in the selected science fields. The other is concerned with plans for the Ph.D. and expectations regarding the date that degree will be received.

Starting in the spring of 1961, NORC administered four successive yearly questionnaires to a large sample of the nation's June, 1961 graduates. The sample was a two-stage one. The first stage involved the sampling of 135 accredited institutions providing undergraduate training in a wide range of fields.[2] Officials of those institutions were asked to provide lists of the seniors they expected to graduate in June. All 135 institutions cooperated. From these lists, a sample of slightly more than 41,000 names was drawn. Local representatives then got in touch with the seniors in the sample and requested them to fill out the first questionnaire in the four-year sequence. Eighty-four per cent of those approached did so. The next three waves of the study were mailed to those originally falling in the sample. Response rates for these years were 76, 71, and 59 per cent. Forty-nine per cent returned all four questionnaires.

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[1] The actual fields included are listed on p. xxii.

[2] All schools with enrollments of five hundred or more were included in the sample, whether they were accredited or not.

Students from some of the smaller schools were undersampled. Their responses have been weighted to bring them up to parity with those of other respondents. Only data so weighted are presented in this report.

This report is limited to respondents who returned all four questionnaires. As far as we have been able to tell, this procedure introduces no substantial bias. The largest discrepancy favors respondents with high academic performance, but it is too slight to have an appreciable impact on the findings. Of course, any assessment of bias is limited to the items available for inspection. No one can be sure that there is no hidden bias in any study.[3]

The four questionnaires were oriented toward graduate school attendance. The first dealt with plans for graduate study, undergraduate academic performance and experiences, background information, and occupational plans and aspirations. The next two followed up on these interests, with particular attention to graduate school attendance. The fourth added information on progress in graduate studies, as well as other matters of less relevance to this report.

The two reports in this series have grown out of the joint efforts of NORC and the Resources Analysis Branch of NIH in manpower in science and health. This agency of NIH has been involved in NORC's study of 1961 college graduates from its inception and has provided contract funds for the present reports. These reports have been prepared to NIH specifications to the extent that their needs could be met by the technology at our disposal and the information at hand.

This report deals with three major areas: actual graduate enrollment in any of the selected science fields, as well as three-year patterns of enrollment; the extent to which persons planning to enroll in one of these fields actually did so; and the anticipated career activities of graduate students in the selected science fields. In addition, a short chapter is devoted to the activities of people interested in one of the selected science fields but not in graduate school.

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[3] For further details, see James A. Davis, "Attrition in the 1962 and 1963 Follow-up Waves in the NORC Panel Survey of June, 1961, College Graduates" (Chicago: National Opinion Research Center Working Paper, September, 1964, multilithed), and Richard A. Ellis, "Attrition and Bias in the Sample" (Chicago: National Opinion Research Center, n.d., processed).

Highlights of the Findings

1. A total of 4,394 people (13 per cent of the sample) had enrolled during at least one year in the selected science fields--45 per cent for all three years, 15 per cent for the first two years only, and 10 per cent or fewer in other combinations.

2. Rates of continuous enrollment (all three years) and carrying a heavy course load in 1964 varied by field of study as follows:

Field of Graduate Study	Per Cent Continuously Enrolled	Per Cent Carrying Heavy Course Load
Basic medical sciences . . .	64	90
Sociology and anthropology .	59	88
Physical sciences	59	86
Other biosciences	51	80
Health fields	41	97
Mathematics and statistics .	39	81
Psychology	37	80
Social work	8	98

3. Men were more likely than women to have been continuously enrolled, and correspondingly less likely to have suffered a hiatus in their graduate training.

4. High academic performers were most likely to have enrolled continuously and to have been carrying a heavy course load. They were least likely to have dropped out.

5. Students striving for the Ph.D. were most likely to have been enrolled continuously and most likely to have been carrying a heavy course load.

6. Among those continuously enrolled or carrying a heavy course load, most students stayed in the same academic discipline during all three years of the study.

7. Students who had held stipends during the first two years after graduation were more likely than those who did not to have enrolled continuously, and they were more likely to have been carrying a heavy course load in 1964.

8. About two-thirds of the seniors who expected to enroll in one of the selected science fields had actually done so during at least one of the three years following college graduation.

9. Men were more likely than women to have realized their plans for advanced study.

10. The higher the level of undergraduate academic performance, the more likely it was that plans for graduate enrollment would be realized.

11. People planning careers in academic settings or involving academic duties were more likely to enroll than respondents with other career plans.

12. Seniors anticipating advanced study in the basic medical sciences or physical sciences were the most likely to have enrolled in the first three years after graduation. Those who expect to enroll in health or social work were least likely to have carried out their plans.

13. For the most part, those who had failed to enroll in a selected science field despite plans to do so were employed in 1964. In general, these people were not employed in the fields they had expected to study.

14. Of those not in school, most wanted and expected to enroll in graduate school in the future.

15. Men were more likely than women to be planning careers in fields they had studied in graduate school. Women may have undertaken graduate study as preparation for school teaching.

16. Men most frequently expected employment in colleges or universities, women in elementary or secondary schools.

17. Continuously enrolled students were more likely to stay in the same field, anticipate being employed by a college or university, and include teaching or research among their anticipated career activities. Continuously enrolled women were as likely to anticipate academic employment as continuously enrolled men.

ACKNOWLEDGMENTS

Like all NORC reports, this one is the product of many workers, but this study is so large that the contributions of many people have gotten lost in the mists of time. Members of the field department handled the onerous chore of collecting the data for each of the four waves. The data processing department prepared the tabulations, and Toshiko Takahashi and her staff typed several drafts of the report. So many people have participated in each step that it is impossible to thank them individually. The only exception is Miss Bonnie McKeon, whose editorial efforts materially improved the report.

Guidance was received from Dr. Herbert H. Rosenberg, Chief, Resources Analysis Branch, NIH, and Wayne E. Tolliver, Chief, Manpower Analysis and Statistics Section, in setting the specifications of the fields to be covered, in outlining the scope of the inquiry, and in reviewing successive drafts.

TABLE OF CONTENTS

Page

PREFACE iii

ACKNOWLEDGMENTS ix

LIST OF TABLES xiii

LIST OF CHARTS xix

INTRODUCTION xxi

CHAPTER

I ENROLLMENT IN GRADUATE SCHOOL 1

II THE OUTCOMES OF UNDERGRADUATE PLANS FOR ADVANCED STUDY 46

III ACTIVITIES OF THOSE WHO ANTICIPATED ADVANCED STUDY BUT NEVER ENROLLED 64

IV THE CAREER PLANS OF GRADUATE STUDENTS IN THE SCIENCES 75

APPENDICES. 95

LIST OF TABLES

Table		Page
I.1A	Patterns of Enrollment in Graduate School, by Years Enrolled	2
I.1B	Patterns of Enrollment in Graduate School, by Type of Enrollment	4
I.1C	Enrollment Patterns and Course Load	7
I.2A	Graduate Field of Study and Enrollment Patterns in Graduate School	9
I.2B	Graduate Field of Study and Total Enrollment in 1964	10
I.3	Field of Graduate Study, Enrollment Pattern, and Course Load	11
I.4A	Sex and Enrollment Pattern	12
I.4B	Sex and Total Enrollment in 1964	13
I.5	Sex, Enrollment Pattern, and Course Load	14
I.6A	Sex, Family Role, and Enrollment Pattern	15
I.6B	Sex, Family Role, and Total Enrollment in 1964	16
I.7	1964 Family Role, Enrollment Pattern, and Course Load	17
I.8A	Academic Performance Index and Enrollment Pattern	19
I.8B	Academic Performance Index and Total Enrollment in 1964	19
I.9	Academic Ability, Enrollment Pattern, and Course Load	20
I.10A	Highest Degree Expected and Enrollment Pattern	21
I.10B	Highest Degree Expected and Total Enrollment in 1964	22
I.11	Highest Degree Expected, Enrollment Pattern, and Course Load	23
I.12	Enrollment Pattern and Date Doctorate Expected	25

LIST OF TABLES--Continued

Table Page

I.13 Enrollment Pattern, Course Load, and Date Doctorate Expected. 27

I.14 Changes in Field of Study and Enrollment Patterns 30

I.15 Enrollment, Course Load, and Changes in Field of Study. . 31

I.16 School Changes and Enrollment Patterns. 32

I.17 School Changes, Enrollment Pattern, and Course Load . . . 33

I.18A Undergraduate Debts and Enrollment Patterns 34

I.19 Undergraduate Debts, Enrollment Patterns in Graduate School, and Course Load 35

I.20A Graduate Debts and Enrollment Patterns. 36

I.20B Graduate Debts and Total Enrollment in 1964 37

I.21 Graduate School Debts, Enrollment Patterns, and Course Load 37

I.22A Number of Years Stipend Held and Enrollment Patterns. . . 39

I.22B Number of Years Stipend Held and Total Enrollment in 1964 39

I.23 Number of Years of Stipend Holding, Enrollment Pattern, and Course Load 40

I.24 Degree of Graduate School Interference with Non-academic Life and Enrollment Pattern 42

I.25 Enrollment Pattern, Degree of Interference with Various Activities, and Course Load 43

II.1 Anticipated Field of Graduate Study, Senior Plans for Graduate School, and Enrollment in Graduate School, 1961-1964 49

II.2 Anticipated Field of Graduate Study and Actual Field of Graduate Study 51

II.3 Sex, Senior Plans for Graduate School, and Enrollment in Graduate School, 1961-1964 53

LIST OF TABLES--Continued

Table Page

II.4 Sex, Family Role in 1964, Senior Plans for Graduate School and Enrollment in Graduate School, 1961-1964 54

II.5 Academic Performance Index, Senior Plans for Graduate School, and Enrollment in Graduate School, 1961-1964. 56

II.6 Debts for Undergraduate Education, Senior Plans for Graduate School, and Enrollment in Graduate School, 1961-1964 58

II.7 Anticipated Career Employer, Senior Plans for Graduate School, and Enrollment in Graduate School, 1961-1964 60

II.8 Anticipated Career Activities, Senior Plans for Graduate School, and Enrollment in Graduate School, 1961-1964 61

III.1 Sex and Employment among Non-students 65

III.2 Sex and Field of 1964 Employment. 67

III.3 Sex and 1964 Employer of Non-students 68

III.4 Sex and Academic Preparation for Present Job. 69

III.5 Sex and Job Satisfaction. 71

III.6 Family Role and Desire To Enroll in Graduate School 72

III.7 Sex, Family Role, and Expectation of Enrollment 73

III.8 Sex, Job Satisfaction, and Expectation of Enrollment. 74

IV.1 Sex and Career Field. 76

IV.2 Sex, Course Load, and Career Field. 77

IV.3 Sex, Enrollment Pattern, and Career Field 78

IV.4 Sex, Enrollment Pattern, Course Load, and Career Field. . . . 79

IV.5 Sex and Career Employment 81

IV.6 Sex, Course Load, and Anticipated Career Employer 83

IV.7 Sex, Date Highest Degree, and Anticipated Career Employer . . 84

Table Page

IV.8 Sex, Enrollment, and Career Employer 85

IV.9 Sex and Career Activities 88

IV.10 Sex, Course Load, and Anticipated Career Activities 89

IV.11 Sex, Enrollment Pattern, and Career Activities 90

IV.12 Sex, Enrollment Pattern, Course Load, and Career Activities. 92

IV.13 Sex, Date Highest Degree Is Expected, and Career Activities. 93

A-I.1 Graduate Field of Study, Sex, and Enrollment Pattern in Graduate School 95

A-I.2 Graduate Field, Sex, Family Status, and Enrollment Pattern . 96

A-I.3 Graduate Field of Study, API, and Enrollment Pattern 98

A-I.4 Graduate Field of Study, Highest Degree Expected, and Enrollment Pattern 99

A-I.5A Graduate Field of Study, Date Highest Degree Expected, and Enrollment Pattern 101

A-I.5B Field of Graduate Study, Enrollment Pattern, and Date Doctorate Expected, by Students Enrolled in 1964 102

A-I.6 Field of Study, Changes in Field of Study, and Enrollment Pattern 104

A-I.7 Graduate Field of Study, School Changes, and Enrollment Pattern 105

A-I.8 Graduate Field, Undergraduate Debts, and Enrollment Pattern. 106

A-I.9 Graduate Field of Study, Graduate School Debts, and Enrollment Pattern 107

A-I.10 Field of Graduate Study, Number of Years of Stipend Holding, and Enrollment Pattern 108

A-I.11 Graduate Field of Study, Perceived Interferences, and Enrollment Pattern 110

Table Page

A-II.1 Anticipated Field of Graduate Study and Enrollment in Graduate School among Those Anticipating a Selected Science Field of Graduate Study as Seniors 113

A-II.2 Anticipated and Actual Field of Graduate Study among Students with a Selected Science Field at Either Time . . 114

A-II.3 Anticipated Graduate Field of Study, Sex, Senior Plans and Enrollment 115

A-II.4 Anticipated Field of Graduate Study, Sex, Family Role 1964, Senior Plans for Graduate School, and Enrollment 1961-1964 116

A-II.5 Anticipated Graduate Field, Academic Performance, Senior Plans and Enrollment 118

A-II.6 Anticipated Field of Graduate Study, Undergraduate Debts, Senior Plans and Enrollment 120

A-II.7 Anticipated Field of Graduate Study, Anticipated Career Employer, Senior Plans and Enrollment 121

A-II.8 Anticipated Field of Graduate Study, Anticipated Career Activities, Senior Plans and Enrollment 123

A-III.1 Anticipated Field of Graduate Study, Sex, and Current Employment among People Never Enrolled in Graduate Study . 125

A-III.2A Anticipated Field of Graduate Study, Sex, and Field of 1964 Employment 126

A-III.2B Anticipated Field of Graduate Study, Sex, and 1964 Employment Field 127

A-III.3 Anticipated Field of Graduate Study, Sex, and 1964 Employer of Non-students 128

A-III.4 Anticipated Field of Graduate Study, Sex, and Academic Training for Present Job among Those Who Never Enrolled in Graduate School 130

A-III.5 Anticipated Field of Graduate Study, Sex, and Job Satisfaction among Those Who Never Enrolled in Graduate School . . 131

A-III.6 Anticipated Field of Graduate Study, Sex, and Preference for Graduate School in 1965 among Those Who Never Attended Graduate School 132

A-III.7 Anticipated Field of Graduate Study, Sex, and Plans for Future Graduate Study among Those Who Never Enrolled in Graduate School 133

Table Page

A-III.8 Anticipated Field of Graduate Study, Sex, Job Satisfaction, and Expectation of Future Enrollment among Those Not Enrolled 1961-1964 134

A-IV.1 Graduate Field, Sex, and Career Field 135

A-IV.2 Graduate Field, Sex, Enrollment Pattern, and Career Field . 136

A-IV.3 Graduate Field, Sex, and Career Employer 137

A-IV.4 Graduate Field, Sex, Enrollment Pattern, and Anticipated Career Employer 138

A-IV.5 Graduate Field, Sex, and Career Activities 142

A-IV.6 Graduate Field, Sex, Enrollment Pattern, and Career Activities 143

LIST OF CHARTS

Chart		Page
I.A	Patterns of Enrollment in Graduate School, by Years Enrolled	3
I.B	Patterns of Enrollment in Graduate School, by Type of Enrollment	5
II	Enrollment, Senior Plans, and Anticipated Field of Graduate Study	50

INTRODUCTION

The outcome of senior plans for graduate study and actual educational behavior during the first few years after college graduation are related in important ways to national manpower resources. The failure of a college senior to enroll in graduate school during the years immediately after graduation reduces the chances of his ever enrolling. This, in turn, diminishes the potential national supply of specialists with advanced education. Attrition from graduate school also reduces manpower potential, and delayed or interrupted graduate schooling decreases the number of available working years with full training. In order to estimate and allocate the nation's supply of trained specialists, therefore, one must know not only the size of the college graduating class but also the percentages in various fields who go on to graduate school, the number who complete their degrees, and the length of time of degree work. This report attempts to provide some of this information.

This report is limited to scientific fields selected for their interest to the NIH and to those concerned with medical and health-related manpower. For the sake of simplicity, many specific academic disciplines have been combined into a few general fields. The general fields and their component disciplines are shown in the following list. When it has been necessary to talk about fields that do not appear on this list, they have generally been called "non-scientific" fields.

The report is organized into four chapters that (1) analyze factors related to patterns of enrollment in graduate school; (2) analyze factors related to the realization of plans for advanced study in the selected science fields; (3) examine the work experiences of those who did not realize their plans for advanced study; and (4) examine the relationship between graduate-school experiences and career plans of science students.

GENERAL FIELDS AND COMPONENT DISCIPLINES

Basic Medical Sciences

- Anatomy
- Biochemistry
- Biophysics
- Microbiology
- Pathology
- Pharmacology
- Physiology

Other Biosciences

- Biology
- Botany
  - Plant pathology
  - Plant physiology
- Entomology
- Genetics
- Zoology
- Other biological sciences

Health Professions[a]

- Dentistry
- Medical technology
- Nursing
- Occupational therapy
- Optometry
- Pharmacology
- Physical therapy
- Veterinary medicine
- Other health fields

Mathematics and Statistics

Physical Sciences

- Astronomy
- Chemistry
- Geography
- Geology, geophysics
- Metallurgy
- Meteorology
- Oceanography
- Physics
- Physical science general, and other specialties

Psychology

- Clinical
- Counseling
- Educational
- Experimental and general
- Industrial and personnel
- Social
- Other psychological fields

Selected Social Sciences

- Anthropology
- Sociology

Social Work

---

[a] Medicine is specifically excluded from this analysis and thus is not included in the health professions. A special analysis covering the medical students in the sample as well as those who aspired to careers in medicine is being prepared by the staff of the Resources Analysis Branch of the National Institutes of Health, based upon tabulations made available by NORC.

CHAPTER I

ENROLLMENT IN GRADUATE SCHOOL

Introduction

This chapter is devoted to an analysis of various factors related to differing patterns of enrollment of graduate students in the science fields. For example, the factors that differentiate students who enroll continuously from those who delay, interrupt, or discontinue graduate studies will be identified. Factors relating to course loads will also be analyzed.

The relevant variables fall into four categories: personal, academic, financial, and the relation of graduate study to other aspects of the students' lives. The analysis is based upon the 4,394 persons who had enrolled during at least one year for an advanced degree in one of the selected science fields.

Patterns of Enrollment

For the purposes of this analysis, enrollment is defined as registration for at least one course leading to an advanced degree at any time during a year. During the first three years after college graduation there were seven possible enrollment patterns, which, together with their respective frequencies, are shown in Table I.1A.[1]

The table shows that the most common pattern was continuous enrollment in all three years. Of those who had enrolled at least once, nearly half (45 per cent) had enrolled for all three years. An additional 15 per cent had enrolled in the first two years, but not in the third. Thus a total of 60 per cent of the June, 1961, college graduates who had ever enrolled in the scientific fields had done so during either the first two or the first three years following college graduation. The remaining five patterns of enrollment were much less frequent. These data are presented graphically in Chart IA.

---

[1] The following conventions have been followed in presenting the data: No percentages are shown based on less than forty weighted cases; thus the percentages presented can be assumed to be stable. When the case base is less than forty, an asterisk (*) is shown instead of the percentage. (An asterisk is also used when the percentage is less than half of 1 per cent, but in this case the case base reported is forty or greater.) When a cell in a table has no cases, a dash (-) is shown instead of the percentage.

TABLE I.1A

PATTERNS OF ENROLLMENT IN GRADUATE SCHOOL, BY YEARS ENROLLED

(Per Cent of Those Enrolled One or More Years)

Years Enrolled			Per Cent	N
1962	1963	1964	45	1,989
1962	1963		15	655
1962		1964	4	197
1962			10	433
	1963	1964	10	450
	1963		6	243
		1964	10	427
Total			100	4,394

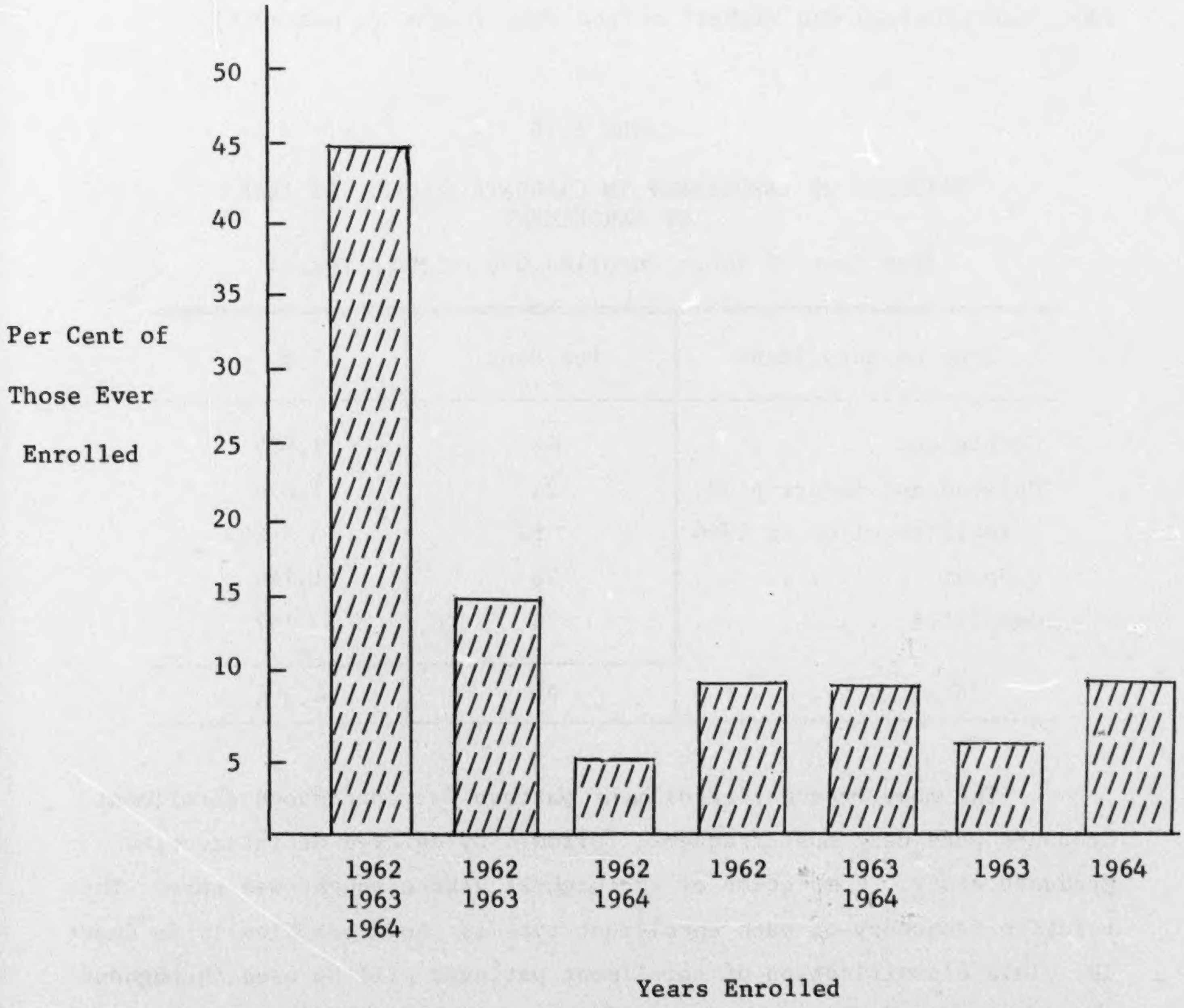
Since our major interest is in factors that differentiate between continuous enrollment and attrition, it is necessary to combine the data on enrollment in order to identify dropouts. The seven-way classification shown above does not discriminate between those who dropped out in 1964 before completing their studies and those who did finish studying and who consequently had no need to enroll in the third year. The seven-way classification further complicates the analysis by classifying those who delayed or interrupted their studies into four groups.

The data show that, of those enrolled only in 1962 or only in 1963, none held the highest degree they expected to attain. Some of those

CHART I.A

PATTERNS OF ENROLLMENT IN GRADUATE SCHOOL, BY YEARS ENROLLED

(Per Cent of Those Enrolled One or More Years)



enrolled for the full two-year period did, however, attain such a degree. The following definitions of enrollment types were established on the basis of years of enrollment, highest degree sought, and highest degree held: (1) Continuous--students who enrolled in 1962, 1963, and 1964 (45 per cent). (2) Interrupted and delayed--students who enrolled in 1964 only, 1963 and 1964, or 1962 and 1964 but not 1963 (24 per cent). (3) Dropouts--students who, in 1964, had not received the highest degree they expected and who had enrolled in 1962 but not since, in 1963 but not 1964, or in 1962 and 1963 but not 1964 (26 per cent). (4) Completed --students who enrolled in 1962 and 1963, but not 1964, and who, in 1964, had received the highest degree they sought (4 per cent).

TABLE I.1B

PATTERNS OF ENROLLMENT IN GRADUATE SCHOOL, BY TYPE OF ENROLLMENT

(Per Cent of Those Enrolled One or More Years)

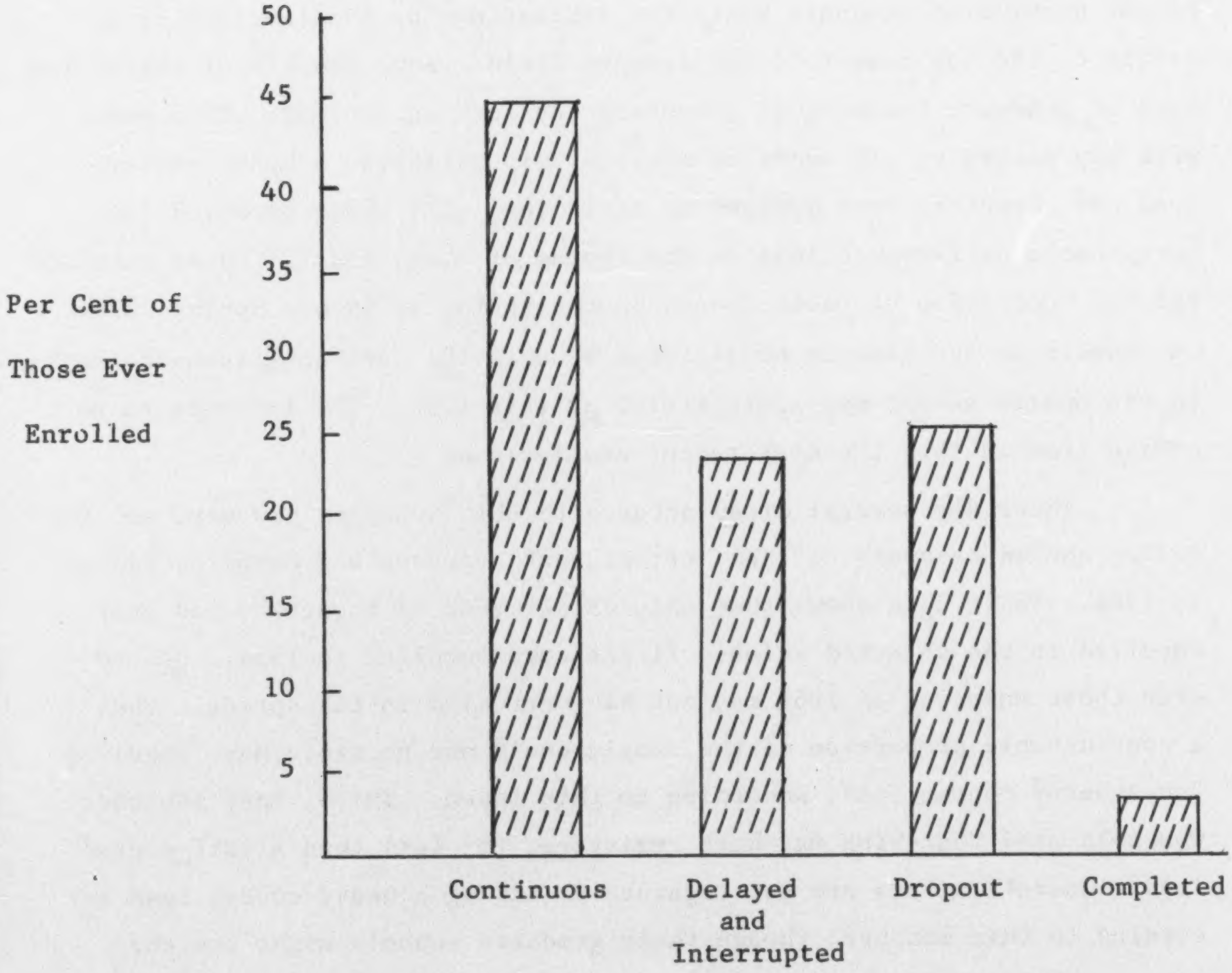
Type of Enrollment	Per Cent	N
Continuous	45	1,989
Delayed and interrupted.	24	1,074
Total enrolled in 1964	69	3,063
Dropout	26	1,164
Completed	4	167
Total	99	4,394

The most frequent enrollment pattern was continuous enrollment. Dropouts were next most frequent, followed by delayed or interrupted graduate study. Completion of the highest degree sought was rare. The relative frequency of each enrollment type is shown graphically in Chart IB. This classification of enrollment patterns will be used throughout the remainder of this report and, for the sake of simplicity, will henceforth be called "enrollment."

CHART I.B

PATTERNS OF ENROLLMENT IN GRADUATE SCHOOL, BY TYPE OF ENROLLMENT

(Per Cent of Those Enrolled One or More Years)



Type of Enrollment

Course Load

Graduate programs in the arts and sciences do not have standard curricula or standard programs that define progress toward advanced degrees. Students may take one course or several; they may enroll year after year, or only once every few years; they may complete their course work and take a full-time job while writing their thesis; or they may work part time while taking courses and writing their thesis. In general, however, the fastest way to obtain an advanced degree is to enroll for as full a course load as possible and to devote full time to thesis-writing once the other formal hurdles have been passed.

These possibilities make it clear why patterns of enrollment alone do not provide an adequate basis for estimating the availability of recruits to the job market in the science field. Some measure of the course load of graduate training is necessary for such an estimate to be made with any accuracy. In order to measure this variable, a heavy course load has therefore been defined as including: (1) those enrolled for more than a half-course load in the spring of 1964, and (2) those enrolled for the completion of their thesis in the spring of 1964. Spring, 1964, was chosen as the time to be analyzed because the last questionnaire mailed to the entire sample was administered at this time. The information on course load is thus the most recent available.

There are several disadvantages to this measure, however, and the reader should be aware of them. First, not everyone who enrolled did so in 1964. Table I.1A shows that only 69 per cent of those who had ever enrolled in the selected science fields were enrolled in 1964. Second, even those enrolled in 1964 may not have enrolled in the spring. Thus a considerable proportion of the sample could not possibly have enrolled for a heavy course load, according to this index. Third, many students who held assistantships may have registered for less than a half-course load. These students are not regarded as taking a heavy course load according to this measure, though their graduate schools might see the matter in a different light.

Despite these disadvantages, the course-load index is still the best available estimate of the length of time required for graduate work.

When it is used in conjunction with the enrollment-pattern index, many of these disadvantages are considerably mitigated. By definition, the course-load index limits the sample to those enrolled in the spring of 1964, and only those with continuous or delayed and interrupted enrollment patterns are involved.

Enrollment and course load.--In the spring of 1964, 85 per cent of the graduate students in the selected science fields were carrying a heavy course load. Regardless of their prior enrollment in graduate school, if they were enrolled in 1964, they were most likely taking more than a half-course load or were completing their thesis.

TABLE I.1C

ENROLLMENT PATTERNS AND COURSE LOAD
(Per Cent Heavy Course Load)

	Per Cent
Continuous	86 (1,989)
Delayed and interrupted.	85 (1,074)
Total enrolled in 1964	85 (3,063)
N	3,063
Not enrolled, 1964 .	1,331
Total	4,394

More than two-thirds of the June, 1961, college graduates who had enrolled for advanced study in the selected science fields were enrolled in 1964, and 85 per cent of those who were enrolled were carrying a heavy course load. Therefore, over half (59 per cent) of the June, 1961, college graduates who had ever enrolled in the selected sciences were carrying a heavy course load in 1964.

Enrollment and field of study.--Not all fields had the same rate of continuous enrollment. The basic medical sciences had the highest rate (64 per cent), and social work the lowest (8 per cent). These differences are due to a number of factors, which will be discussed later.

Those who enrolled after anticipating advanced study in the four fields that had higher than average proportions enrolled continuously (basic medical sciences, other biosciences, selected social sciences, and physical sciences) were among the top four fields in at least two of the following characteristics: per cent male, per cent single, and per cent high on academic performance.

It seems reasonable to assume, and it will be shown in this chapter, that those groups in which high proportions were continuously enrolled were the same groups in which high proportions were likely to have enrolled at all. Thus we will see that the fields in which high proportions of males, single students, or high-API students had enrolled would be the same fields in which high proportions of the same groups had continuously enrolled.

The four fields with rates of continuous enrollment higher than the sample mean of 45 per cent (basic medical sciences, other biosciences, selected social sciences, and physical sciences) ranged from 51 to 64 per cent, and the four fields with rates of continuous enrollment lower than the mean (health professional, mathematics, psychology, and social work) ran from a high of 41 per cent to a low of 8 per cent.

Only in social work did the completion rate exceed 4 per cent. (In all other fields the completion rate was between 2 and 4 per cent.) Fully one-fifth of the students enrolled in this field reported that they had received the highest degree expected. This is probably due to the fact that the most common degree in this field is the master's in social work, generally a two-year degree. This may also account for the low rate of continuous enrollment in social work: since the degree program is completed in two years, there is no need to enroll for a third.

Five fields--basic medical sciences, other biosciences, mathematics, physical sciences, and selected social sciences--were below the mean proportion interrupted and delayed (24 per cent); health, psychology, and social work were above the mean.

Two fields had dropout rates below the sample mean of 26 per cent --basic medical sciences (11 per cent) and selected social sciences (18 per cent); four fields--other biosciences, health, physical sciences, and psychology--had dropout rates about equal to the mean; social work (33 per cent) and mathematics (36 per cent) had rates considerably higher.

The basic medical sciences had the highest rate of continuous enrollment (64 per cent) and the lowest dropout rate (11 per cent), closely followed by the selected social sciences, which had the second highest rate of continuous enrollment (59 per cent) and the second lowest rate of dropouts (18 per cent).

TABLE I.2A

GRADUATE FIELD OF STUDY AND ENROLLMENT PATTERNS IN GRADUATE SCHOOL
(Percentage Distribution)

Field	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Dropout	Completed		
Total biological sciences	57	20	20	3	100	635
Basic medical sciences	64	23	11	2	100	280
Other biosciences .	51	17	28	4	100	355
Health professional fields	41	25	29	4	99[a]	418
Social work	8	38	33	20	99[a]	258
Psychology	37	34	27	2	100	1,278
Selected social sciences	59	21	18	2	100	155
Mathematics and statistics	39	22	36	4	101[a]	496
Physical sciences . .	59	15	24	2	100	1,154
Total	45	24	26	4	99[a]	4,394

[a] Totals differ from 100 per cent due to rounding.

TABLE I.2B

GRADUATE FIELD OF STUDY AND TOTAL ENROLLMENT IN 1964

	Per Cent
Total biological sciences . .	77
Basic medical sciences . .	87
Other biosciences	68
Health professional fields .	46
Social work	46
Psychology	71
Selected social sciences . .	80
Mathematics and statistics .	61
Physical sciences	74
Total	69

Graduate field and course load.--The pattern of course load by field is not at all like the pattern of continuous enrollment. Social work, the field in which students were the least likely (8 per cent) to have enrolled continuously, is the field in which they were the most likely (98 per cent) to have carried a heavy course load. Social work and the health fields are both below the median in proportion of students enrolled continuously, but both are above the median in proportion carrying heavy course loads.

Students of social work, the health professions, basic medical sciences, selected social sciences, and physical sciences were more likely than the average graduate science student to have been carrying heavy course loads, and those studying mathematics, psychology, and the other biosciences were less likely to have been doing so. Although 85 per cent of the graduate science students were carrying heavy course loads, 90 per cent or more were doing so in three fields (basic medical sciences, health professions, and social work), and in two fields (other biosciences and psychology) only 80 per cent were doing so.

There were also considerable differences by enrollment pattern in some fields, such as physical sciences (17 per cent) and basic medical sciences (11 per cent). The fact that the total for all fields shows no difference by enrollment obscures the fact that only the physical sciences and math students who were continuously enrolled were more likely to have been carrying heavy course loads than were the students whose training had been delayed and interrupted. In the other fields in which comparisons are possible, the converse is true.

TABLE I.3

FIELD OF GRADUATE STUDY, ENROLLMENT PATTERN, AND COURSE LOAD

(Per Cent Heavy Course Load)

Field of Graduate Study	Enrollment Pattern				Total Enrolled in 1964	
	Continuous		Delayed and Interrupted			
Total biosciences . .	83	(359)	90	(124)	85	(483)
Basic medical sciences	87	(179)	98	(64)	90	(243)
Other biosciences .	79	(180)	82	(60)	80	(240)
Health professional fields	95	(173)	100	(103)	97	(276)
Social work	*	(22)	99	(97)	98	(119)
Psychology	78	(470)	82	(440)	80	(910)
Selected social sciences	88	(92)	*	(32)	88	(124)
Mathematics and statistics	83	(192)	78	(107)	81	(299)
Physical sciences . .	90	(681)	73	(171)	86	(852)
All selected fields	86	(1,989)	85	(1,074)	85	(3,063)

N	3,063
Not enrolled in 1964 .	1,331
Total	4,394

All, or virtually all, delayed or interrupted students in the health professional fields, social work, and the basic medical sciences were carrying heavy course loads.

Thus, even though the total for all fields shows that there was no difference in course load by enrollment, in four fields (basic medical sciences, other biosciences, health professional, and psychology), those who had not enrolled all three years were more likely to be carrying heavy course loads than were those who had enrolled annually. In only two fields--mathematics and physical sciences--was the converse true.

Sex

As might be expected, sex was related in important ways to patterns of enrollment in graduate school during the first three years after college graduation. In general, men were more than twice as likely as women to have enrolled continuously, and correspondingly less likely to have delayed, interrupted, or dropped out.

Sex and enrollment.--The effects of sex on enrollment held true in all of the scientific fields. In social work and mathematics, however, men were not much more likely than were women to have enrolled continuously, but a much higher than average proportion of women completed their studies. Men, however, were still much more likely than women to have delayed or interrupted their graduate education.

TABLE I.4A

SEX AND ENROLLMENT PATTERN
(Percentage Distribution)

Sex	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Drop-out	Completed		
Male	55	21	22	2	100	2,927
Female	26	31	36	7	100	1,467
Total . . .	45	24	26	4	99	4,393

TABLE I.4B

SEX AND TOTAL ENROLLMENT IN 1964

	Per Cent
Male	76
Female . . .	57
Total . .	69

Larger than average proportions of both men and women enrolled continuously in the basic medical sciences, the selected social sciences, and the physical sciences. Larger than average proportions of women did so in the other biosciences and psychology, while men exceeded the mean proportion continuously enrolled in the health fields.

The average proportion dropping out was greater for men in social work and psychology, and for women in social work, other biosciences, mathematics, physical sciences, and health fields.[2]

To sum up, men were, generally speaking, more likely to have enrolled continuously in graduate school in the three years following graduation than were women. Women were much more likely than were men to have dropped out of graduate school, probably because of marriage, pregnancy, and other family responsibilities.[3] The low rate of continuous enrollment (i.e., enrollment for three consecutive years, by our definition) in social work is undoubtedly due to the fact that the master's in social work is a two-year degree. Table I.4 showed the high proportions of both sexes that had completed the highest degree expected in this field.

Sex and course load.--Although men were much more likely than were women to have been enrolled in 1964, there was not much difference between sexes in the proportion of students enrolled in 1964 who were carrying heavy course loads. In fact, women were slightly more likely than men to have been doing so. There was not much difference at all among the continuously-enrolled students, but among the delayed and interrupted ones, women were 9 per cent more likely than were men to have been carrying heavy course loads.

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[2] These data are in Table A-I.1.

[3] This subject will be explored in greater depth in the next section of this chapter.

TABLE I.5

SEX, ENROLLMENT PATTERN, AND COURSE LOAD

(Per Cent Heavy Course Load)

Sex	Enrollment Pattern		Total Enrolled in 1964
	Continuous	Delayed and Interrupted	
Male . . .	86 (1,608)	80 (616)	84 (2,224)
Female . .	84 (381)	91 (458)	88 (839)

N	3,063
Not enrolled in 1964 .	1,331
Total	4,394

If the data from tables I.4 and I.5 are combined, it can be seen that about two-thirds of the men who had ever enrolled in the selected science fields were enrolled and carrying heavy course loads in 1964, but that only half of the women were doing so.

Family Role

The discussion of the data dealing with the influence of sex on enrollment made it clear that family role could be expected to have an influence on enrollment. Chapter II shows that the presence of children in 1964 made it less likely for respondents to have enrolled at all, or to have carried a heavy course load. In this section the influence of family role on enrollment and course load among those who actually enrolled in the selected science fields is assessed.

Men and respondents without children were much more likely to have carried out their plans to enroll in graduate school than were women and respondents with children. We expect that these same factors will be similarly related to enrollment patterns and that men and respondents without children will be more likely than women and respondents with children to have enrolled continuously rather than to have delayed or interrupted their education, or to have dropped out, and, regardless of enrollment, to have enrolled for a heavy course load.

Family role and enrollment.--Generally speaking, men who were single, or married but not fathers, were more likely than were fathers to have enrolled continuously. Fathers were more likely than were other men to have dropped out, but there were no differences in the proportion completed or delayed and interrupted by family role among the men. Family role made no difference in rates of continuous enrollment among the women. Thus, women who had to care for children were no less likely to enroll for all three years than were single women. However, mothers were less likely to have delayed or interrupted their graduate study, but more likely to have dropped out altogether than were other women.

TABLE I.6A

SEX, FAMILY ROLE, AND ENROLLMENT PATTERN

(Percentage Distribution)

Sex and Family Role	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Drop-out	Completed		
Male:						
Single	58	20	20	2	100	1,148
Husbands	62	22	13	2	99	685
Fathers	47	21	29	2	99	990
Female:						
Single	25	38	28	8	99	702
Wives	27	30	36	6	99	380
Mothers	25	19	50	6	100	289

N	4,194
NA	200
Total . .	4,394

TABLE I.6B

SEX, FAMILY ROLE, AND TOTAL ENROLLMENT IN 1964

	Per Cent
Male:	
Single	78
Husbands	84
Fathers	68
Female:	
Single	63
Wives	57
Mothers	44

It was not the simple fact of marriage that caused differences in enrollment patterns, but rather the responsibilities of parenthood. Table I.6 shows differences between respondents with children and those without. A separate analysis of the women in graduate school suggests that many of those with children who do enroll have older children who do not confine them to the house. Thus mothers are able to enroll continuously as frequently as other women.

Fathers undoubtedly dropped out more frequently than other men so that they could take jobs to support their families; mothers dropped out more often than other women so that they could bear and raise children. The rate of delayed or interrupted study is probably lower for mothers than for other women because the former dropped out, while the latter returned to school after taking time to earn money for their own or their husband's education.

The highest rate of continuous enrollment was found among single men in the health fields (85 per cent) and the lowest among mothers in mathematics and single women in the health fields (4 per cent). The average proportion of fathers enrolled continuously was exceeded by fathers studying the basic medical, other biological, and physical sciences and the health fields; the average proportion of mothers enrolled continuously was exceeded by mothers in the basic medical sciences, psychology, and the health fields.[4]

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[4] These data are shown in Table A-I.2.

Women were less likely than men to have enrolled continuously, but more likely to have completed, delayed, interrupted, or dropped out of graduate study. Fathers were less likely to have enrolled continuously than other men, but mothers were no less likely than other women to have done so. Thus, while family responsibilities deterred fathers from continuously attending graduate school, they did not deter mothers. Instead mothers seem to have been influenced to drop out of school entirely rather than to delay or interrupt their graduate study.

Family role and course load.--As expected, mothers and fathers were less likely than other men and women to be carrying heavy course loads in 1964. Differences are smaller among the men than among the women. It seems that even though mothers were able to enroll continuously as frequently as other women, even the continuously-enrolled mothers were less likely to be carrying heavy course loads than the other women.

TABLE I.7

1964 FAMILY ROLE, ENROLLMENT PATTERN, AND COURSE LOAD

(Per Cent Heavy Course Load)

1964 Family Role	Enrollment Pattern		Total Enrolled in 1964
	Continuous	Delayed and Interrupted	
Males:			
Single	89 (661)	80 (229)	86 (890)
Husbands . . .	86 (426)	82 (153)	85 (579)
Fathers . . .	83 (468)	82 (209)	83 (677)
Females:			
Single	87 (177)	91 (268)	90 (445)
Wives	83 (104)	91 (116)	87 (220)
Mothers . . .	72 (71)	89 (55)	79 (126)

N	2,937
Widowed, divorced, separated.	34
NA, family role	92
Not enrolled in 1964	1,331
Total	4,394

Again it can be seen that, regardless of family role, the continuously-enrolled men were more likely to be carrying a heavy course load than the delayed and interrupted men, but the converse was true among women.

Single women and wives were the most likely to have carried a heavy course load, and mothers the least likely to have done so. All men fall between these two extremes.

Enrollment and Academic Factors

Chapter II shows that high-API respondents[5] were the most likely to have enrolled in graduate school, especially if their senior plans to do so had been definite. The high-ability students were not, however, the most likely to have been carrying a heavy course load. When we analyze the graduate science students we would therefore expect that those of higher ability would have been most likely to have enrolled continuously, but not most likely to have been carrying a heavy course load.

Other academic factors, such as highest degree expected and date of completion of highest degree should also be related to enrollment patterns and course load. Students expecting the doctorate would be more likely to have enrolled continuously and to have carried a heavy course load, as would those expecting to complete their studies sooner rather than later.

Enrollment and academic ability.--Table III.8 shows that the high-API students were by far the most likely to have enrolled continuously, and were correspondingly less likely than students of lower ability to have delayed, interrupted, or dropped out of graduate school. Although differences in rates of completion of studies were minimal, the high-API students were more than twice as likely to have completed their studies. (All those who had completed their highest degree sought the master's degree.)

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[5] API, the Academic Performance Index used throughout the 1961 college graduates study, adjusts undergraduate grade-point average for the quality of the undergraduate school. The high-API group consists of the top fifth of the sample on the index (19 per cent of the sample), the medium-API group consists of the remainder of the above average students (37 per cent of the sample), and the low-API group consists of the bottom 45 per cent of the sample on the index. For the technical details of the construction of the index, see James A. Davis, Great Aspirations (Chicago: Aldine, 1964), Appendix 3, p. 256.

TABLE I.8A

ACADEMIC PERFORMANCE INDEX AND ENROLLMENT PATTERN
(Percentage Distribution)

Academic Performance Index	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Drop-out	Completed		
High	58	18	19	5	100	1,239
Medium . . .	42	26	27	4	99	1,747
Low	37	28	32	2	99	1,356

N	4,342
NA	52
Total . . .	4,394

TABLE I.8B

ACADEMIC PERFORMANCE INDEX AND
TOTAL ENROLLMENT IN 1964

	Per Cent
High . . .	76
Medium . .	68
Low . . .	65

There were also considerable variations by graduate field of study. For example, among high-API students, 77 per cent in the basic medical sciences, 74 per cent in the physical sciences, 56 per cent in sociology and anthropology, 25 per cent in the health fields, and only 11 per cent in social work were continuously enrolled.[6]

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[6] These data are contained in Table A-I.3.

Academic ability was related to dropout rates as well: low-API students had the highest dropout rates (except in the health fields), while high-API students had the lowest rates (except in health and other biosciences). There was not much difference in the dropout rates of low- and medium-API students, the big difference coming between high- and all other API levels. Since Chapter II shows that high API was related to enrollment, and since we saw earlier that the high-API student was more likely to enroll continuously, this was to be expected.

API and course load.--Chapter II shows that among people who anticipated graduate study in the selected science fields, those with high API's enrolled in 1964 were not the most likely to have been carrying a heavy course load. Table I.9 shows that the high-API students enrolled in the selected science fields were the most likely to have been carrying a heavy course load.

TABLE I.9

ACADEMIC ABILITY, ENROLLMENT PATTERN, AND COURSE LOAD

(Per Cent Heavy Course Load)

Academic Ability	Enrollment Pattern		Total 1964 Enrollment
	Continuous	Delayed and Interrupted	
High	91 (718)	82 (227)	89 (945)
Medium	82 (742)	82 (456)	82 (1,198)
Low	83 (508)	89 (383)	86 (891)

N	3,034
NA, API	29
Not enrolled in 1964. .	1,331
Total	4,394

The overall differences were slight, but among the continuously enrolled the finding is quite clear. However, among the delayed and interrupted, the low-API students were the most likely to have been enrolled for a heavy course load.

If the 1964 enrollment data in tables I.8 and I.9 is combined to show the proportion enrolled for a heavy course load, based on all students, it can be seen that 68 per cent of the high-API and 56 per cent of the medium- and low-API students were enrolled for a heavy course load in 1964. Thus, high academic ability is more likely to have produced a heavy course-load enrollment in 1964 than is medium or low academic ability.

Highest degree expected.--Academic performance is one measure of the academic factors related to continuous enrollment in graduate school. Another is the highest degree students expect. In most scientific fields, social work and the health fields being the exceptions, the highest degree sought is generally the doctorate. In most scientific fields, a Ph.D. is generally necessary to secure the better positions. In social work and the health fields, however, a master's or a professional degree generally gives full professional status.

Thus we would expect that the higher the level of the degree sought, the more likely is the respondent to enroll continuously, in order to reduce the length of time until he is employable. Table I.10 confirms this reasoning. Two-thirds of the students seeking the doctorate, but only 42 per cent of those seeking a professional degree and 24 per cent of those seeking a master's degree, were continuously enrolled.

TABLE I.10A

HIGHEST DEGREE EXPECTED AND ENROLLMENT PATTERN
(Percentage Distribution)

Highest Degree Expected	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Dropout	Completed		
Professional . .	42	29	19	10	100	536
Master's . .	24	37	31	7	99	1,556
Doctorate. .	68	16	15	-	99	1,988

N	4,080
Bachelor's and NA . . .	314
Total	4,394

TABLE I.10B

HIGHEST DEGREE EXPECTED AND TOTAL ENROLLMENT IN 1964

	Per Cent
Professional . . .	71
Master's	61
Doctorate	84

Similarly, those expecting the doctorate had lower dropout and delay-interruption rates than those expecting either a professional or a master's degree. And while 7 to 10 per cent of the latter had already received their degrees, none of the prospective doctorates had finished their degree work in three years.

Students expecting a Ph.D. in social work or the health fields were much less likely than students expecting a doctorate in the other fields to have enrolled continuously. This may be due to the fact that many schools require practical professional experience in social work and health fields as a prerequisite to doctoral work. Continuous enrollment would therefore be impossible for some of the students seeking a doctorate in social work or the health fields.

Students expecting the doctorate were the most likely to enroll continuously, and the least likely to drop out. Those expecting the professional degree were second in both categories. Low dropout and high continuous rates make for the fastest progress through graduate school.

Highest degree expected and course load.--The relationship between highest degree expected and course load is much like the relationship between highest degree expected and enrollment pattern. For both continuous enrollment or heavy course loads, the rank order is doctorate, professional, master's degree. Although this is true of course load for all students enrolled in 1964, and for those who enrolled continuously, the delayed and interrupted students who expected the professional degree were more likely than those who expected the doctorate to have been enrolled for a heavy course load in 1964.

Further, except for those students expecting the doctorate, those who had delayed or interrupted their studies were more likely than those who had enrolled continuously to have been carrying a heavy course load.

TABLE I.11

HIGHEST DEGREE EXPECTED, ENROLLMENT PATTERN, AND COURSE LOAD
(Per Cent Heavy Course Load)

Highest Degree Expected	Enrollment Pattern		Total 1964 Enrollment
	Continuous	Delayed and Interrupted	
Professional . . .	80 (224)	95 (157)	86 (381)
Master's	72 (381)	81 (573)	78 (954)
Doctorate	91 (1,362)	86 (328)	90 (1,690)

N	3,034
Bachelor's or NA highest degree	38
Not enrolled in 1964	1,331
Total	4,394

It would seem that the students who sought a professional degree, but who had not enrolled for all three years, were most anxious to complete their degree requirements.

Combining tables I.10 and I.11, however, shows that 76 per cent of the students expecting the doctorate, and 61 per cent of those expecting a professional degree, but only 48 per cent of those expecting a master's degree were enrolled for a heavy course load.

Date of highest degree expected.--Since speed in completing work for the highest degree sought increases the working life of the degree holder and decreases the length of time until he is employable at full potential, the date the highest degree is expected is an important piece of information. It is probable that those students who enrolled continuously expected their degrees somewhat sooner than those who enrolled in other patterns.

Only those students who were enrolled in 1964 and who expected the doctorate were asked when they expected to receive their degree. Data are therefore confined to students with continuous or delayed and interrupted enrollment patterns who expected the doctorate. We would expect the differences between the two enrollment patterns to be fairly slight. The definition of delayed-interrupted is such that the greatest delay possible was two years, and the longest interruption possible was one year. Further, a previous NORC study of graduate students found a mean difference of only slightly over one year between continuously-enrolled and delayed students.[7]

Table I.12 shows that a similar relationship held for the students enrolled in 1964 and expecting the doctorate. Enrollment pattern makes a two-year difference in the median expected date of receiving the doctorate. Those students who enrolled continuously had a median date of 1966, while those who had delayed or interrupted their enrollment had a median date of 1968. The median date of expected receipt of the doctorate was 1966 for all students who had enrolled in 1964.

A close examination of Table I.12 shows that two-thirds of the continuously-enrolled, but only one-fifth of the delayed and interrupted expected their highest degree prior to 1967. Thus, although the medians are only two years apart, a much higher proportion of the continuously-enrolled expected to have completed graduate work prior to 1967. While two-thirds of the continuously-enrolled expected to have completed graduate work and, presumably, to be able to take a job prior to 1967, only 18 per cent of the delayed and interrupted students expected to be in this position.

Students who delayed or interrupted their graduate studies were much less likely (18 per cent) than those who enrolled continuously (66 per cent) to expect to receive their doctorate prior to 1967. Fully 80 per cent of the continuously-enrolled students in the basic medical and physical sciences, but only 20 per cent of the delayed and interrupted

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[7] Seymour Warkov, Bruce Frisbie, and Alan Berger, Graduate Student Finances: 1963 (Chicago: National Opinion Research Center, Report No. 103, 1965), p. 211.

TABLE I.12

ENROLLMENT PATTERN AND DATE DOCTORATE EXPECTED

(Cumulative Percentage Distribution)

Enrollment Pattern	Date Doctorate Expected								N	Median
	1964	1965	1966	1967	1968	1969	1970	After 1970		
Continuous	5	38	66	80	86	90	96	100	1,341	1,966
Delayed and Interrupted	*	2	18	37	55	66	79	100	302	1,968
Total, 1964 Enrollment	4	31	57	72	80	86	93	100	1,643	1,966

N	1,643
NA, highest degree	1,420
Not enrolled in 1964	1,331
Total	4,394

students in psychology, expected to receive their doctorate prior to 1967. In terms of the median duration of the doctoral program, continuously-enrolled students anticipated a five-year degree program, while those who delayed or interrupted their studies anticipated a seven-year program.

These expectations can be compared with the experiences of earlier graduate students, reported by Berelson.[8] We have combined our basic medical and other biological science fields to compare with Berelson's biological sciences, our social science and psychology fields to compare with his social sciences, and our physical science and mathematics fields to compare with his physical sciences. The results of comparison are shown below:

MEDIAN DURATION IN YEARS BETWEEN BACHELOR'S AND DOCTORATE

Field	Berelson, 1957 Doctorates	NORC, 1964 Graduate Students
Physical science	6	5
Biological science	7	5
Social science	8	6

Since Berelson's respondents had already received their doctorates and the NORC respondents reported anticipated duration, the match is fairly close. A degree of optimism of one to two years on the part of graduate students does not seem unrealistic, and may in fact be justified.

Enrollment, course load, and date doctorate expected.--Course load should also be related to the date the doctorate is expected. Table I.13 shows that this is the case. Students who were enrolled for a heavy course load in 1964 anticipated receiving their doctorate two years earlier than those who were carrying a light course load.

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[8] Bernard Berelson, Graduate Education in the United States (New York: McGraw-Hill, 1960), p. 157.

TABLE I.13

ENROLLMENT PATTERN, COURSE LOAD, AND DATE DOCTORATE EXPECTED

(Cumulative Percentage Distribution)

Enrollment Pattern	Course Load	Date Doctorate Expected								N	Median
		1964	1965	1966	1967	1968	1969	1970	After 1970		
Continuous	Heavy	5	39	69	83	89	93	96	100	1,223	1,966
	Light	2	17	38	51	57	67	89	100	118	1,967
Delayed and interrupted . . .	Heavy	-	3	20	42	59	71	80	99	259	1,968
	Light	2	2	7	9	30	37	70	100	43	1,970
Total enrolled in 1964	Heavy	4	36	63	78	86	91	96	102	1,482	1,966
	Light	2	13	30	40	50	59	84	100	161	1,968

N	1,643
NA, highest degree	1,420
Not enrolled in 1964	1,331
Total	4,394

The median date of anticipated receipt of the doctorate varied both by course load and by enrollment pattern. Even the delayed and interrupted students who carried a heavy course load anticipated receiving their doctorate after the continuously-enrolled students who carried a light course load. While the medians for course load alone are only two years apart, when enrollment is considered, the extremes are four years apart.

The following excerpt from Table I.13 shows quite clearly the relationship between enrollment, course load, and anticipated date of receipt of doctorate.

PER CENT EXPECTING DOCTORATE PRIOR TO

	1967		1971	
Enrollment Pattern	Course Load			
	Heavy	Light	Heavy	Light
Continuous	69	37	96	89
Delayed and interrupted	20	7	80	70
Total 1964 enrollment . .	63	30	94	84

Students enrolled for a heavy course load in 1964 were twice as likely as those taking a light course load to expect to receive their doctorates prior to 1967. Most students anticipated receiving their degree prior to 1971, although those enrolled for a heavy course load were still more likely than those enrolled for a light course load to have expected their degree by this time.

Thus, both continuous enrollment and carrying a heavy course load in 1964 were related to date of anticipated receipt of the doctorate. Slowing-down of academic progress took place either through delayed or interrupted study patterns or through carrying a light course load. Tables I.12 and I.13 have shown that each of these factors added about two years to the median date at which the doctorate was expected.

Academic Mobility

The situation of a student within a system of graduate education can be partially defined on two dimensions, field of study and academic discipline. Mobility on either of these dimensions should provide clues to the academic progress of a student. This section provides some basic data about the academic mobility of graduate students. The assumption that academic mobility is related to a slowing-down of academic progress finds some support, but the data do not provide a final answer.

Changes in field of study.--Because an analysis of field changes and enrollment patterns would be exceedingly complex, this analysis is limited to the 45 per cent of the sample who had enrolled continuously. It is thus impossible to assess the relationship between changing fields of study and enrollment patterns.

In order that terminology be kept as simple as possible, a particular concentration, such as anatomy, will be called an academic discipline, and a general field of study, such as the basic medical sciences, will be called an academic field. It should be noted that those who remain in a given academic discipline also, by definition, remain in their academic field.

Table I.14 shows that a little over two-thirds of the continuously-enrolled students (68 per cent) stayed in the same academic field for all three years. This can be attributed to the fact that almost as many (63 per cent) stayed in the same discipline during this time. Thus, 5 per cent changed disciplines within a field, and 32 per cent changed from one field to another.

In four fields (mathematics, physical sciences, social work, health) students were more likely than the average continuously-enrolled graduate student to have stayed in the same discipline. Students in the other fields were more likely than the average to have changed fields.[9] Of course, it can be assumed that basic medical sciences and other biosciences, which had the highest rates of field-changing, probably exchanged between themselves, and Chapter II indeed shows that there was a great deal of interchange between these fields.

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[9] See Table A-I.6 for this data.

TABLE I.14

CHANGES IN FIELDS OF STUDY AND ENROLLMENT PATTERNS

(Per Cent Continuously Enrolled)

	Per Cent
Field of study constant	68
Academic discipline constant .	63

N	1,989
NA, not continuously enrolled	2,405
Total	4,394

Considering the extensive prerequisites for advanced study in the sciences, it is somewhat surprising that so many students were able to switch into one of the scientific fields. Physical sciences, the field that could be expected to have more specific prerequisites, did have the lowest proportion of students who had studied another field.

In addition, course load was strongly related to staying in an academic discipline. The continuously-enrolled students who were carrying a heavy course load were much more likely to have stayed in a single academic discipline than those who were carrying a light course load. Conversely, most of the continuously-enrolled students who were carrying a light course load abandoned not only their academic discipline, but also the general field under which it was subsumed.

The finding that the continuously-enrolled students carrying heavy course loads were much more likely to stay in the same discipline and much less likely to leave the general field than those carrying light course loads shows clearly that the continuously-enrolled student is the "young man in a hurry." He is making fastest progress toward his degree goal because: (1) he has enrolled continuously; (2) he is most likely to have enrolled for a heavy course load; and (3) he has concentrated his energy in a single discipline.

TABLE I.15

ENROLLMENT, COURSE LOAD, AND CHANGES IN FIELD OF STUDY

(Per Cent Continuously Enrolled)

Course Load	Field Changes		N
	Field of Study Constant	Academic Discipline Constant	
Heavy	73	92	1,702
Light	0	18	287

N	1,989
Not continuously enrolled	2,405
Total	4,394

Academic mobility and school changes.--According to academic folklore, it is best for students to leave their alma mater before beginning graduate study, and, indeed, prior research has shown this to be typical behavior. However, it may not be so typical for graduate students to attend more than one university. Some may move from one school to another after receiving their master's degrees. Some may get their master's degrees at schools which do not offer the Ph.D. and thus be forced to move. But only roughly one-third (30 per cent) of the students enrolled in 1964 reported that they had enrolled at more than one graduate school since receiving their baccalaureate degrees.

Table I.16 shows that changing schools was not related to the enrollment patterns of students in the sciences. When graduate field of study is controlled, however, a strong relationship is found in psychology, social work, physical sciences, and the health fields. In the first two of these fields, students who changed schools are more likely to have enrolled continuously, while in the last two, the opposite is true.[10]

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[10] See Table A-I.7.

TABLE I.16

SCHOOL CHANGES AND ENROLLMENT PATTERNS[a]

(Percentage Distribution)

Institutional Mobility	Enrollment Pattern		Total Per Cent	N
	Continuous	Delayed and Interrupted		
Enrolled at more than one school . .	65	35	100	904
Enrolled at only one school	65	35	100	2,119

[a] The question about changing graduate schools was asked in 1964 of only those respondents who were currently enrolled.

N	3,023
NA	40
Not applicable . .	1,331
Total	4,394

TABLE I.17

SCHOOL CHANGES, ENROLLMENT PATTERN, AND COURSE LOAD

(Per Cent Heavy Course Load)

School Changes	Enrollment Pattern		Total Enrolled in 1964
	Continuous	Delayed and Interrupted	
No	89 (1,369)	90 (750)	89 (2,119)
Yes	78 (589)	72 (315)	76 (904)

N	3,023
NA	40
Not enrolled in 1964 .	1,331
Total	4,394

School changes and course load.--Changing schools was related to the course load carried in the spring of 1964. Students who changed graduate schools were 13 per cent less likely to be enrolled for a heavy course load than were those who did not change schools. Course load made a smaller difference among those students who enrolled continuously (11 per cent) than among those who delayed or interrupted their studies (18 per cent). Thus, while changing schools was not related to enrollment, it was related to course load. People who did and did not change graduate schools were equally likely to have enrolled continuously, but those who changed were less likely to have carried a heavy course load than those who did not.

Enrollment and Financial Factors

This section deals with the relationship between financial position and graduate enrollment. It might be expected, for instance, that a student who accumulated debts before entering graduate school would be less likely to enroll continuously, or that he would be less likely to take a heavy course load. It is expected that those students who enrolled continuously, and those who completed their graduate studies, would be most likely to have held stipends for at least two years. In this section the distribution of stipends by enrollment pattern will be examined, and two types of debts will be considered--debts for undergraduate schooling and debts for graduate school.

Undergraduate debts and enrollment.--The overall incidence of debts for undergraduate study was low (18 per cent) and ranged from a low of 3 per cent in psychology to a high of 20 per cent in the basic medical sciences. Contrary to expectations, the presence or absence of debts for undergraduate education did not make any significant difference in the pattern of enrollment in graduate school.

Table I.18 clearly shows that undergraduate debts made virtually no difference in patterns of enrollment in graduate school. Students with debts were slightly more likely than those without debts to have delayed or interrupted their graduate studies, were equally likely to have enrolled continuously, and were less likely to have dropped out. Students with undergraduate debts may have felt constrained not to drop out, because many undergraduate loan programs do not accumulate interest while the debtor is enrolled as a student. Some students with debts may have taken time off to earn money to pay off part of their debts. However, indebtedness did not reduce the proportion enrolled continuously, and, indeed, students with debts were more likely to have been enrolled in 1964 than were those without debts.

TABLE I.18A

UNDERGRADUATE DEBTS AND ENROLLMENT PATTERNS
(Percentage Distribution)

Debts for Undergraduate Education	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Dropout	Completed		
None . . .	45	24	27	4	100	3,492
Any . . .	45	30	22	2	99	787

TABLE I.18B

UNDERGRADUATE DEBTS AND TOTAL
ENROLLMENT IN 1964

	Per Cent
None . . .	69
Any . . .	75

Undergraduate debts and course load.--Just as the presence or absence of debts for undergraduate education made little difference in the pattern of enrollment, so it made little difference in the course load that students were carrying in 1964. However, students with no debts were slightly less likely than students with debts to have been enrolled in 1964, but slightly more likely to have been carrying a heavy course load. This was true regardless of the pre-1964 enrollment, but was particularly true of those who had not enrolled each year.

TABLE I.19

UNDERGRADUATE DEBTS, ENROLLMENT PATTERNS IN GRADUATE SCHOOL, AND COURSE LOAD

(Per Cent Heavy Course Load)

Debts for Undergraduate Education	Enrollment Pattern		Total Enrolled 1964
	Continuous	Delayed and Interrupted	
None	87 (1,574)	87 (822)	87 (2,396)
Any	83 (357)	79 (239)	81 (596)

N.	2,992
NA, Debts	71
Not enrolled in 1964 . . .	1,331
Total	4,394

Thus, it seems that while indebtedness for undergraduate education did not deter enrollment in 1964, it had a slight tendency to reduce the probability of carrying a heavy course load. However, combining the data from tables I.18 and I.19 shows that 60 per cent of the students both with and without debts were enrolled and carrying a heavy course load in 1964. The fact that students with debts were more likely to delay and interrupt their studies, and less likely to enroll for a heavy course load once they did enroll, suggests that undergraduate debts may have had a slight inhibiting effect on graduate study.

The existence of such an inhibiting effect is not surprising; what is surprising is its slightness.

Graduate debts and enrollment.--The overall incidence of debts for graduate school (17 per cent) was about the same as that for undergraduate education. The range was quite different, however, going from a low of 10 per cent (in mathematics) to a high of 27 per cent (in the health fields). Students in all fields except mathematics and the physical sciences were more likely to have accumulated debts for graduate school than for undergraduate school. Since debts were incurred to further enrollment, it is not surprising that those with graduate school debts were more likely than those without graduate school debts to have enrolled continuously. Students without debts for graduate school were more likely than those with such debts to have dropped out of graduate school altogether or to have delayed or interrupted their studies.

The relationship between the presence or absence of debts for graduate school and continuous enrollment varied by field of graduate study. The maximum difference between people with and without debts was found in the health professions (43 per cent), and the minimum was found in social work (11 per cent). Students without debts were 28 per cent more likely than students with debts to drop out in the health professions, but the difference was only 3 per cent in the physical sciences.[11]

TABLE I.20A

GRADUATE DEBTS AND ENROLLMENT PATTERNS

(Percentage Distribution)

Debts for Graduate Education	Enrollment Pattern				Total Per Cent	N
	Contin-uous	Delayed and Inter-rupted	Drop-out	Com-pleted		
None . . .	42	26	28	4	100	3,551
Any . . .	62	17	17	4	100	723

N . . . 4,274
NA . . 120
Total 4,394

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[11] These data are shown in Table A-I.9.

TABLE I.20B

GRADUATE DEBTS AND TOTAL ENROLLMENT IN 1964

	Per Cent
None . . .	68
Any . . .	79

Nevertheless, students who had borrowed money for their graduate education were more likely than those who had not borrowed to have been enrolled in 1964. Perhaps they were more highly motivated to stay in graduate school.

Debts for graduate school and course load.--Generally speaking, debts incurred for graduate school were not significantly related to course load carried in the spring of 1964. What slight differences existed (a maximum of only 5 per cent) were not consistent.

The data in tables I.20 and I.21 show that, while it was definitely necessary to have been a graduate student in order to have obtained loans for graduate school, it was not necessary to have been carrying a heavy course load.

TABLE I.21

GRADUATE SCHOOL DEBTS, ENROLLMENT PATTERNS, AND COURSE LOAD

(Per Cent Heavy Course Load)

Debts for Graduate Education	Enrollment Pattern		Total Enrolled 1964
	Continuous	Delayed and Interrupted	
No debts . . .	85 (1,478)	86 (935)	86 (2,413)
Some debts . .	90 (450)	82 (125)	88 (575)

N.	2,988
NA	75
Not enrolled, 1964	1,331
Total	4,394

Except for the fact that students with debts for graduate education were more likely than students without such debts to have enrolled continuously, financial liabilities do not appear to have been related to patterns of study in graduate school. The presence of debts accumulated prior to graduate school entrance did not have any marked relationship with either enrollment patterns or course loads. Debts accumulated during graduate school did not make it less likely that a heavy course load would be carried in 1964. The conclusion that educational debts, which were rather uncommon, did not seriously affect the progress of the graduate science students seems inescapable.

Stipend holding and enrollment.--Table I.22 shows the effect of holding a stipend on enrollment patterns. The table shows no data for students holding stipends for three years because, by definition, everyone who held a stipend for three years was enrolled for three years. The table shows, however, that the students who held stipends for two years were more likely to have enrolled continuously or to have completed their highest degree than were the students who never held a stipend or those who held a stipend for only one year. Conversely, the students who never held a stipend, or held a stipend for only one year, were more likely to have dropped out or to have delayed and interrupted their studies than were students who held a stipend for two years.

The major difference occurs between those who held stipends for two years and those who held stipends less than two years. The former were more likely to have enrolled for three years or to have completed their highest degree in two years than the latter, and less likely to have dropped out or to have delayed or interrupted their studies.

This general pattern held true in most fields. In the other biosciences, social work, and the health professions, however, those students who held stipends for two years were not much more likely to have enrolled continuously or to have completed their studies than were students who held stipends for less than two years. And in social work and the health professions, students who held stipends for two years were not less likely than students who did not hold stipends this long to have delayed or interrupted their studies. In the service

TABLE I.22A

NUMBER OF YEARS STIPEND HELD AND ENROLLMENT PATTERNS
(Percentage Distribution)

Number of Years Stipend Held	Enrollment Pattern				Total Per Cent	N
	Continuous	Delayed and Interrupted	Dropout	Completed		
Two . . .	40	21	27	13	101	845
One . . .	23	39	34	4	100	897
None. . .	25	34	39	2	100	1,608

TABLE I.22B

NUMBER OF YEARS STIPEND HELD AND
TOTAL ENROLLMENT IN 1964

	Per Cent
Two	61
One	62
None	59

fields (social work and the health professions), then, holding a stipend for two years neither increased the proportion enrolled continuously nor decreased the proportion who delayed or interrupted their studies. With this and a few other minor exceptions, the general pattern of a beneficial relationship between holding stipends for two years and enrollment pattern held true in each field of study.

About a third (37 per cent) of the graduate science students never held a stipend, about a fifth held a stipend once, another fifth held a stipend for two years, and roughly a quarter (24 per cent) held a stipend for all three years.

Stipend holding and course load.--Since Table I.22 showed that the major difference in enrollment was between those who held stipends for less than two years and those who held stipends for two years, and because of the focus on 1964 course load, Table I.23 includes the students who held stipends for three years. These students and those who held stipends for two years are combined, as are the students who held stipends for one year or not at all. It would be expected that

TABLE I.23

NUMBER OF YEARS OF STIPEND HOLDING, ENROLLMENT PATTERN, AND COURSE LOAD

(Per Cent Heavy Course Load)

Number of Years of Stipend Holding	Enrollment Pattern		Total Enrolled 1964
	Continuous	Delayed and Interrupted	
Two years or more	90 (1,379)	91 (177)	90 (1,556)
Less than two years . . .	75 (610)	83 (897)	80 (1,507)

N.	3,063
Not enrolled in 1964 .	1,331
Total	4,394

having held a stipend for two or three years would increase the probability of carrying a heavy course load. Table I.23 shows that this was the case. Students who held stipends for two or three years were 10 per cent more likely to have been carrying a heavy course load than were other students. The difference was greatest among the continuously-enrolled students. Those who had been enrolled all three years and had held financial support for at least two years showed a high proportion carrying heavy course loads. The continuously-enrolled students who had not had two to three years of financial support were the least likely to have carried a heavy course load. Continuing financial support is obviously an important factor in maintaining a pattern of continuous heavy course-load enrollment in graduate school.

Non-academic Life and Enrollment

If a student feels that his graduate education interferes with his other activities, such as his family life, his social life, or his job, he may be less likely to enroll continuously, or to carry a heavy course load. It is therefore important to investigate the influence of other activities on graduate school enrollment patterns.

The questions were asked of only those students who were enrolled in 1964, so data are available only for the continuously-enrolled and delayed or interrupted students.

Graduate school was perceived as interfering with social life most often (64 per cent), with family life somewhat less often (56 per cent), and with non-academic jobs least often (30 per cent). Thus graduate school interfered with social life approximately twice as much as it did with jobs.

Students in the basic medical sciences were least likely to say that graduate school interfered with their social life (57 per cent), and students of the health professions were most likely (72 per cent) to say that it interfered. Students of social work and social sciences were least likely to say that graduate school interfered with their family life (44 per cent), and students in the health fields were most likely to perceive such interference (61 per cent). Psychology students most often felt that graduate school interfered with jobs (43 per cent), and students of the basic medical sciences were least likely to feel this way (10 per cent).

However, except in the case of jobs, the degree to which a student felt that graduate school interfered with his non-academic life had no effect on the proportion continuously enrolled or carrying a heavy course load. Those students who felt that graduate school interfered with their jobs were less likely to have enrolled continuously and less likely to have carried a heavy course load. Perhaps their jobs were simply more important to them than their studies.

Summary of Chapter I

A total of 4,394 respondents (13 per cent of the sample) had enrolled at least once in the selected science fields in the first three years after college graduation in June, 1961: 45 per cent for all three years, 15 per cent for the first two years, and 10 per cent or fewer for each of the other possible combinations of years.

Those who did not enroll for all three years were combined into three groups: delayed and interrupted (24 per cent), dropouts (27 per cent), and those who finished the highest degree sought (4 per cent).

TABLE I.24

DEGREE OF GRADUATE SCHOOL INTERFERENCE WITH NON-ACADEMIC LIFE AND ENROLLMENT PATTERN

(Percentage Distribution)

Non-academic Activity	Degree of Interference by Graduate Education	Enrollment Pattern		Total Per Cent	N
		Continuous	Delayed and Interrupted		
Family life	Greatly . . .	67	33	100	300
	Somewhat . .	66	34	100	1,341
	Not at all .	64	36	100	1,305

N	2,946
NA	117
Not enrolled in 1964. .	1,331
Total	4,394

Non-academic Activity	Degree of Interference by Graduate Education	Continuous	Delayed and Interrupted	Total Per Cent	N
Social life	Greatly . . .	69	31	100	352
	Somewhat . .	65	35	100	1,568
	Not at all .	64	36	100	1,068

N	2,988
NA	75
Not enrolled in 1964 .	1,331
Total	4,394

Non-academic Activity	Degree of Interference by Graduate Education	Continuous	Delayed and Interrupted	Total Per Cent	N
Non-academic job	Greatly . . .	47	53	100	203
	Somewhat . .	59	41	100	604
	Not at all .	66	34	100	1,882

N	2,689
NA	374
Not enrolled in 1964 .	1,331
Total	4,394

TABLE I.25

ENROLLMENT PATTERN, DEGREE OF INTERFERENCE WITH VARIOUS ACTIVITIES, AND COURSE LOAD

(Per Cent Heavy Course Load)

Graduate School Interference With:		Enrollment Pattern		
		Continuous	Delayed	Total 1964
Family life	Greatly . . .	83 (202)	88 (98)	85 (300)
	Somewhat. . .	87 (879)	83 (462)	86 (1,341)
	Not at all. .	86 (829)	86 (476)	86 (1,305)
N			2,946	
NA			117	
Not enrolled in 1964. . .			1,331	
Total			4,394	
Social life	Greatly . . .	87 (242)	90 (110)	88 (352)
	Somewhat. . .	85 (1,020)	82 (548)	84 (1,568)
	Not at all. .	87 (684)	88 (384)	88 (1,068)
N			2,988	
NA			75	
Not enrolled in 1964. . .			1,331	
Total			4,394	
Non-academic job	Greatly . . .	81 (96)	83 (107)	82 (203)
	Somewhat. . .	79 (355)	81 (249)	80 (604)
	Not at all. .	87 (1,248)	86 (634)	86 (1,882)
N			2,689	
NA			374	
Not enrolled in 1964. . .			1,331	
Total			4,394	

Course loads were also investigated. Those carrying a heavy course load were those enrolled for more than a half course load or for completion of their thesis in the spring of 1964.

Rates of continuous enrollments and heavy course load varied by field of study as follows:

Field of Graduate Study	Per Cent Continuously Enrolled	Per Cent Carrying Heavy Course Load
Basic medical sciences . . .	64	90
Sociology and anthropology .	59	88
Physical sciences	59	86
Other biosciences	51	80
Health fields	41	97
Mathematics and statistics .	39	81
Psychology	37	80
Social work	8	98

The following findings also emerged:

1. Men were more likely than women to have been continuously enrolled, and were less likely than women to have delayed, interrupted, or dropped out, or to have been carrying a heavy course load in 1964.

2. Fathers were least likely to have been continuously enrolled among men, but family status was not associated with continuous enrollment among women. Parents of either sex, however, were the least likely to have been carrying a heavy course load.

3. High-level academic performers were most likely to have enrolled continuously and to have been carrying a heavy course load, and they were least likely to have dropped out.

4. Students who sought the Ph.D. were most likely to have enrolled continuously. Moreover, those who enrolled continuously expected to get their highest degree sooner than those with other enrollment patterns. Those who expected to obtain a doctorate were the most likely to have enrolled for a heavy course load, and those who did enroll for

a heavy course load expected to get their doctorate about two years sooner than those who did not enroll for a heavy course load.

5. Among the continuously-enrolled and among students carrying a heavy course load, most stayed in the same academic discipline all three years.

6. Students who changed graduate schools were no more likely than those who did not to have enrolled continuously, but they were less likely to have been carrying a heavy course load in 1964.

7. Although undergraduate debts did not affect enrollment in graduate school, students with debts for graduate education were more likely than those without such debts to have enrolled continuously. Students with undergraduate debts were slightly less likely to have been carrying heavy course loads in 1964, although debts for graduate school were not related to course load carried in 1964.

8. Students who held stipends for two years were more likely than those who held stipends for less than two years to have enrolled continuously or to have completed their studies, and they were more likely to have been carrying a heavy course load in 1964.

9. The degree to which students felt graduate school interfered with their family or social life was not related to their enrollment patterns or to the course loads they carried in 1964. Those who felt that graduate school interfered with their non-academic jobs, however, were less likely to have enrolled continuously or to have carried a heavy course load.

CHAPTER II

THE OUTCOMES OF UNDERGRADUATE PLANS FOR ADVANCED STUDY

Introduction

One concern of a study of graduate science students must be the outcomes of undergraduate plans for graduate study. In the first chapter we analyzed the academic behavior of graduate students. This chapter will be devoted to an analysis of those who carried out undergraduate plans for advanced study in the selected science fields and why they were able to do so.

Previous research has indicated that many career decisions are made in the undergraduate years and that extremely high proportions of college graduates (77 per cent in one recent sample) plan to attend graduate school.[1] In the science fields with which we are concerned, the realization of such plans is crucial to the career of a prospective scientist. With a higher degree, all kinds of opportunities are open, but without such education, a scientific career is strictly limited. Knowledge of factors that influence the realization of plans for advanced study in the sciences is vital to those interested in estimating national manpower resources.

Chapter II will focus on the realization of senior plans for advanced study in the sciences. The following chapter will examine the situation of those whose senior plans were not realized--those who wanted to go on for advanced study but who did not do so in the first three years after college graduation.

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[1] James A. Davis, Great Aspirations (Chicago: Aldine Publishing Co., 1964), p. 43; see also Davis, Undergraduate Career Decisions (Chicago: Aldine Publishing Co., 1965).

The Sample for This Chapter

The analysis in this chapter is based on a sample that differs considerably from that used in Chapter I. In the first chapter the sample comprised all students who had enrolled at least once for an advanced degree in a selected science field. The sample in this chapter consists of all college seniors who anticipated enrolling for an advanced degree in a selected science field. The third chapter will also be based upon a sample of college seniors who anticipated enrolling for an advanced degree in a selected science field. However, in the third chapter we will be concerned only with those who did not enroll in the first three years after college graduation.

It should be noted that, since the sample for this chapter is based on college seniors who anticipated advanced study in the selected science fields, the enrollment rates reported here are somewhat higher than those based on the population of all college graduates. Miller, analyzing data from the first year after graduation, reported that 35 per cent of all college graduates enrolled in graduate school in the year following graduation.[2] Our data show that almost twice as many--66 per cent--enrolled at least once in the three years following graduation.

Enrollment

More than two-thirds of the college seniors who anticipated advanced study in the selected science fields actually enrolled at least once during the first three years following college graduation. Students who anticipated advanced study in the basic medical sciences (78 per cent) and in the physical sciences (77 per cent) enrolled with more than average frequency. Students planning advanced study in the selected social sciences, mathematics, and other biosciences were close to the average, and those planning to study in the health professions (55 per cent) and social work (52 per cent) were far below the average enrollment rate for the sample group. They were, however, still considerably above the average for the entire sample reported by Miller.[3]

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[2] Norman Miller, One Year after Commencement (Chicago: NORC Report No. 93, 1963), p. 4.

Enrollment and senior plans.--One of the factors shown to be an important determinant of graduate school attendance is senior plans for advanced work. Miller found considerable differences in enrollment in the first post-collegiate year, by plans of college seniors. Because the definition of the plans categories in this report differs from that of Miller in time focus used,[4] it is not possible to compare enrollment rates by senior plans with the data reported by Miller.

An average of 72 per cent of seniors with definite plans and 55 per cent of seniors with tentative plans enrolled in graduate school at least once during the first three years after college graduation. Among respondents with definite plans, those in the physical sciences (82 per cent) and basic medical sciences (81 per cent) were more likely than average to undertake graduate work. Those with tentative plans to study other biosciences and physical sciences were more likely to attend graduate school than average. For both types of plans, those planning to study social work were the least likely to enroll.

Table II.1 and Chart II both show that the effect of plans on enrollment varied by field of study. The average difference between seniors with tentative plans and those with definite ones was 17 per cent. In the health fields, those with definite plans were twice as likely as those with tentative plans to enroll (34 per cent vs. 17 per cent). At the other extreme, however, plans made virtually no difference among seniors who anticipated advanced study in social work. Clearly, both anticipated field of study and senior plans for attending graduate school were important "predictors" of actual enrollment.

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[3] Ibid.

[4] Respondents who had been accepted for graduate school in 1961-1962, or who reported that, as seniors in college, they planned to attend at a definite date in the future are classified as definite. Those who planned to attend in 1961-1962 but who had not been accepted when they returned their spring, 1961 questionnaires, or who planned to attend in the future, but without a definite date in mind, have been classified as tentative. Miller classified those who had been accepted for 1961-1962 as definite, those who wanted to attend in 1961-1962 but who had not been accepted as tentative. Those with plans to attend in the future, regardless of the specificity of the date, were called futures.

TABLE II.1

ANTICIPATED FIELD OF GRADUATE STUDY, SENIOR PLANS FOR GRADUATE SCHOOL, AND ENROLLMENT IN GRADUATE SCHOOL, 1961-1964

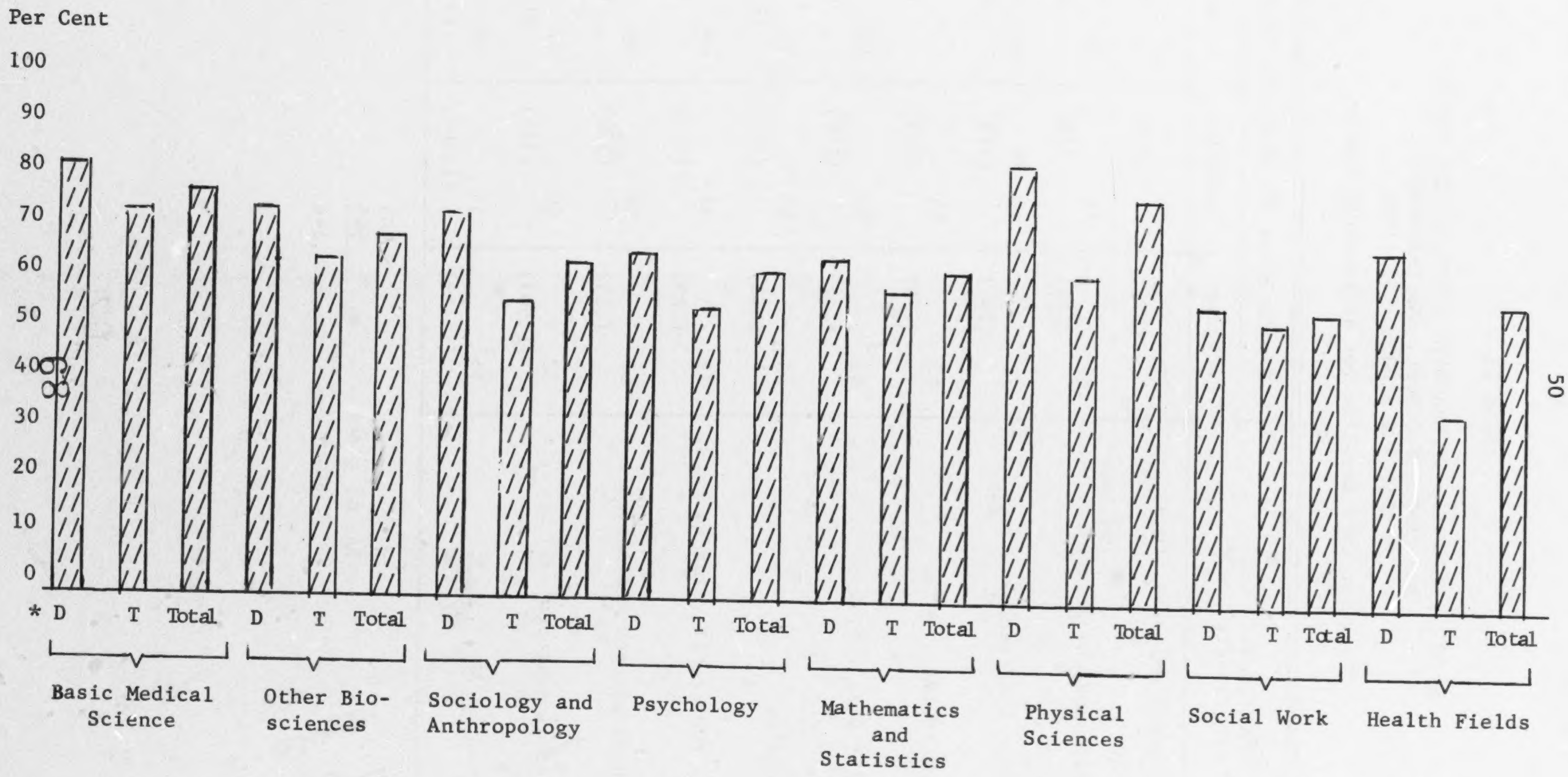
(Per Cent Ever Enrolled for an Advanced Degree)

Anticipated Field of Graduate Study	Senior Plans for Graduate School		
	Definite	Tentative	Total
Biological sciences, total . .	76 (573)	64 (250)	72 (823)
Basic medical sciences . . .	81 (226)	71 (72)	78 (298)
Other biosciences	72 (347)	62 (178)	68 (525)
Heath fields	67 (426)	33 (225)	55 (651)
Social work	53 (283)	50 (128)	52 (411)
Psychology	68 (940)	57 (572)	64 (1,512)
Selected social sciences . . .	71 (189)	53 (115)	64 (304)
Mathematics and statistics . .	67 (385)	58 (202)	64 (587)
Physical sciences	82 (1,003)	60 (314)	77 (1,317)
Total all fields	72 (3,799)	55 (1,806)	66 (5,605)

N	5,605
NA, no plans	541
Total	6,146

CHART II

ENROLLMENT, SENIOR PLANS, AND ANTICIPATED FIELD OF GRADUATE STUDY



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[*] Senior plans--D= Definite; T = Tentative.

Anticipated and actual field of graduate study.--The preceding discussion has shown that almost three-quarters of the students with definite plans, and over half those with tentative plans, actually enrolled in graduate school. But actual enrollment in graduate school is only one part of the process of completing plans for graduate study. Another factor is the field of enrollment. Only those students who enroll in the field they intended to study as seniors completely carry out their undergraduate plans. Table II.2 shows that two-thirds of the respondents who anticipated studying a selected science field actually enrolled in their intended field.

TABLE II.2

ANTICIPATED FIELD OF GRADUATE STUDY AND ACTUAL FIELD OF GRADUATE STUDY

(Per Cent of Those Who Ever Enrolled Actually Enrolling in Anticipated Field)

Anticipated Field of Graduate Study	Per Cent	N
Total biological sciences* . . .	67	626
Basic medical sciences	53	238
Other biosciences	61	388
Health fields	74	383
Social work	65	237
Psychology	53	1,040
Sociology and anthropology . . .	42	207
Mathematics and statistics . . .	74	394
Physical sciences	81	1,058
Total all fields.	66	3,945

N	3,945
Never enrolled . . .	2,201
Total	6,146

*This total shows the proportion from both basic medical and other biosciences who enrolled in either field. The detailed data below it show the proportion enrolling in the same field only.

Seniors who anticipated advanced study in the physical sciences, mathematics, and health professions were much more likely to enroll in their anticipated field than was the average senior who anticipated advanced study in the selected science fields. Those who anticipated studying the basic medical or other biosciences were less likely than the average prospective graduate science student to stay in their anticipated field, but two-thirds of those in both fields did stay in the biological sciences. However, smaller than average proportions of the seniors who anticipated advanced study in the selected social sciences (42 per cent) and psychology (53 per cent) enrolled in their anticipated field. Those who anticipated study in these fields and who did enroll in graduate school tended to enroll in fields outside of the selected sciences. Many seniors who anticipated advanced work in psychology, for example, enrolled in education. This is not surprising, since most of the psychologists in the sample anticipated advanced training in clinical psychology or counseling and guidance.

Generally speaking, the data from Tables II.1 and II.2 show that most students carried out their plans for enrollment in graduate school, and of those who went on, most did so in the fields that they had planned to study.

Sex and Family Status

Other research on the outcomes of undergraduate plans for graduate school, and on graduate students in general, has identified a number of characteristics that are related to enrollment for advanced degrees. These characteristics include sex, family role, and financial liabilities.[5] This section will examine the effect of these characteristics on enrollment.

The tables presented in the text will generally not show anticipated field of graduate study. Inclusion of this variable would make for unwieldy handling and reading. Instead, the text tables will be summaries showing the mean for all fields. The tables for each field are in Appendix II. In the discussion of the tables, however, we will from time to time mention differences among the fields.

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[5] See James A. Davis, Stipends and Spouses (Chicago: University of Chicago Press, 1962); Warkov et al., Graduate Student Finances, 1963 (Chicago: NORC, 1965); Miller, op. cit.

Sex and enrollment.--Table II.3 shows that men were much more likely than women to have carried out their plans to enroll in graduate school. Almost three-quarters of the men who anticipated graduate work in a selected science field enrolled, but only 56 per cent of the women did so. The effect of senior plans was the same for both sexes: those with definite plans enrolled more frequently than those with tentative plans. It should be noted, however, that men with tentative plans were as likely as women with definite plans to have enrolled, emphasizing the importance of sex as a factor in enrollment.

TABLE II.3

SEX, SENIOR PLANS FOR GRADUATE SCHOOL, AND ENROLLMENT IN GRADUATE SCHOOL, 1961-1964

(Per Cent Ever Enrolled)

Sex	Senior Plans for Graduate School		Total
	Definite	Tentative	
Male	78 (2,374)	62 (934)	74 (3,308)
Female.	61 (1,425)	48 (872)	56 (2,297)

N	5,605
NA, no plans . . .	541
Total	6,146

Men who planned to study the basic medical sciences were the most likely to enroll (88 per cent), and women who planned to study the health professions were the least likely to do so (44 per cent). In general, the pattern of enrollment by field followed the overall pattern: respondents with definite plans were more likely to enroll than those with tentative plans, and men in both groups were more likely to enroll than were women. The extremes were in the basic medical sciences and the health professions. In the former, almost nine out of ten men (89 per cent) with definite plans enrolled, while in the latter only 30 per cent of the women with tentative plans enrolled.[6]

Family role in 1964 and enrollment.--Prior research and common sense both indicate that it is extremely difficult to support a family and attend graduate school at the same time. We would therefore expect that parents would be the least likely to have enrolled in graduate school.

TABLE II.4

SEX, FAMILY ROLE IN 1964, SENIOR PLANS FOR GRADUATE SCHOOL AND ENROLLMENT IN GRADUATE SCHOOL, 1961-1964

(Per Cent Ever Enrolled for an Advanced Degree)

Sex and Family Role	Senior Plans for Graduate School		Total
	Definite	Tentative	
Male:			
Single	82 (939)	63 (296)	77 (1,235)
Married	85 (504)	79 (151)	84 (655)
Fathers	69 (852)	57 (431)	65 (1,283)
Female:			
Single	71 (639)	56 (284)	66 (923)
Married	64 (344)	57 (205)	61 (549)
Mothers	41 (373)	33 (312)	37 (685)

N	5,330
NA, role.	191
NA, no plans.	541
Widowed, divorced, or separated	84
Total	6,146

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[6] These data are shown in Table A-II.3.

Indeed, parents of either sex were much less likely to have enrolled in graduate school than people with fewer family responsibilities. The effect was twice as strong among the women (a minimum difference of 24 per cent) than it was among the men (a minimum difference of 12 per cent). Since the primary responsibility for caring for children rests with women, and since fathers are not as restricted to the home, men are thus more able to fulfill both roles. It was not unexpected, therefore, that fathers would be twice as likely as mothers to have enrolled in graduate school.

Although there are differences in enrollment between married men and unmarried students, they are overshadowed by the differences between parents and non-parents. It should be noted, however, that sex is still a strong factor, and that fathers are as likely to have enrolled in graduate school as single women or married women without children.

The same general pattern holds for both plans categories and in all fields: differences between parents and non-parents overshadow differences between single and married students. The sole exception is found among the men who anticipated advanced study in psychology. In this field, fathers were as likely as other men to have enrolled.

Academic Performance

There is considerable reason to expect that respondents with higher academic ability would be more likely than those of lesser ability to enroll in graduate school. Miller has shown that high-ability students enrolled more frequently than those of lesser ability in the first post-collegiate year.[7] This finding should hold throughout the three years we are considering.

The measure of academic ability we employ is the academic performance index (API), which adjusts undergraduate grade-point average for college quality.[8]

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[7] Miller, op. cit., p. 10.

[8] This index was described at some length in Chapter I. See page 18.

Table II.5 shows that academic ability makes a considerable difference in enrollment rates. Overall, respondents with high API's were 22 per cent more likely than respondents with low API's to have enrolled in graduate school. Respondents with medium API's enrolled at a rate intermediate between those with high and low API's, but were slightly above the average for all respondents who anticipated a selected science graduate field.

TABLE II.5

ACADEMIC PERFORMANCE INDEX, SENIOR PLANS FOR GRADUATE SCHOOL, AND ENROLLMENT IN GRADUATE SCHOOL,1961-1964

(Per Cent Ever Enrolled for an Advanced Degree)

API	Senior Plans for Graduate School		Total
	Definite	Tentative	
High	82 (1,116)	56 (229)	78 (1,345)
Medium	74 (1,386)	60 (789)	69 (2,175)
Low	60 (1,243)	48 (770)	56 (2,013)

N	5,533
NA, API	72
NA, no plans	541
Total	6,146

Although respondents with low API's were the least likely to have enrolled in both plans categories, the high-API respondents were not the most likely to have done so. The general pattern held true among those with definite plans, but not among those with tentative plans. In the latter group, those with high and medium API's had essentially similar enrollment rates. Further, the difference between the highest and the lowest enrollment rate was 22 per cent among those with definite plans, but only 12 per cent among those with tentative plans. This shows the effect of API on enrollment. The fact that low-API respondents with definite plans were as likely to have enrolled as high- and medium-API respondents with tentative plans shows the effect of plans on enrollment.

In general, the overall pattern was maintained in each anticipated field of study. Two exceptions, however, should be noted. In the service (health and social work) fields, students of medium ability were more likely to have enrolled in graduate school than those of high ability. It should also be noted that the effect of plans was exceptionally strong in the health professions: those with definite plans enrolled more than twice as frequently as those with tentative plans.

The highest enrollment rate was found among the high-API respondents anticipating advanced study in the physical sciences (91 per cent), and the lowest rates among the low-API students anticipating study in social work and mathematics (40 per cent) and the high-API students anticipating study in the health professions (39 per cent).

Academic ability seems to have been a less important determinant of enrollment in the biological sciences and service (health and social work) fields than in other fields (psychology, social sciences, mathematics, and physical sciences). In the former group, respondents with medium or low API's were more likely to enroll than those with high API's, or at most, there was a 16 per cent difference between enrollment rates. In the latter group, however, high-API respondents always enrolled most frequently, and the difference was at least 19 per cent and as much as 44 per cent.[9]

Obstacles to Graduate Study

Davis' analysis of the first wave of this study showed that financial factors were cited by seniors as reasons for not planning graduate work. Over a quarter of the sample cited such reasons.[10] We will therefore examine the effect of finances on anticipated advanced study in the selected science fields.

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[9] See Table A-II.5.

[10] Davis, Great Aspirations, pp. 64-69.

One would expect that those who had incurred debts for undergraduate schooling would be less likely to have enrolled in graduate school. Since it was necessary for them to borrow money for their undergraduate education, they might also find it necessary to borrow for graduate school. With already-existing financial responsibilities, they might be tempted to pay off old debts rather than to enroll in graduate school and incur new ones.

Table II.6 shows, however, that this is not the case. Few college graduates who anticipated advanced study in the selected sciences reported debts. While nearly 4,500 had no debts, less than a fourth as many--only 975--had any debts. The presence or absence of debts for undergraduate schooling made virtually no difference in the proportion of seniors who enrolled. Regardless of the debts incurred, about two-thirds had enrolled at least once. Only among those seniors with tentative plans was there any difference, and in this case, those with debts were more likely than those without debts to have enrolled. This pattern held in all anticipated fields except the health professions. In this field, those with debts were much more likely than those without debts to have enrolled.[11]

TABLE II.6

DEBTS FOR UNDERGRADUATE EDUCATION, SENIOR PLANS FOR GRADUATE SCHOOL, AND ENROLLMENT IN GRADUATE SCHOOL, 1961-1964

(Per Cent Ever Enrolled for an Advanced Degree)

Debts for Undergraduate Education	Senior Plans for Graduate School		Total
	Definite	Tentative	
No debts	72 (3,046)	53 (1,447)	66 (4,493)
Some debts . . .	71 (681)	64 (294)	69 (975)

N	5,468
NA, debts	137
NA, no plans	541
Total	6,146

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[11] These dates are shown in Table A-II.6

The fact that many undergraduate loan programs do not require repayment or begin accumulating interest as long as the borrower is a student may help to explain this finding. Thus, the borrower might be more inclined to enroll in graduate school, and might not feel any pressure to work in order to repay debts incurred for undergraduate education.

Career Plans

Since some occupations generally require more advanced education than other occupations, it would seem reasonable to expect that students who plan careers in occupations requiring more advanced education would be most likely to realize their plans for enrollment in graduate school.

The remaining portion of Chapter II is devoted to an analysis of the graduate school enrollment of students who anticipated advanced study in the selected science fields and who planned careers of various types. Two aspects of career-planning will be considered: anticipated employer, and anticipated activities.

Anticipated career employer and enrollment.--As expected, respondents anticipating employment in colleges and universities were the most likely to have realized their plans for enrollment in graduate school, almost nine out of ten having done so. Almost as likely to have enrolled (more than eight out of ten) were those who anticipated employment in a research institute. Least likely to have enrolled in graduate school were those who anticipated self-employment or employment in a public welfare agency (50 per cent each).

Senior plans did not importantly alter these relationships. In both plans categories, those who anticipated employment in colleges, universities, and research institutes were most likely to have realized their plans for enrollment in graduate school, and those who anticipated self-employment or employment in a public welfare agency were the least likely to have done so.

Controlling for anticipated field of study shows the same pattern for all fields. Although the case base is not large enough for analysis in most instances, it can be seen that even those who anticipated advanced study in social work and academic careers were considerably more likely to enroll in graduate school than were those who anticipated careers in welfare agencies.

TABLE II.7

ANTICIPATED CAREER EMPLOYER, SENIOR PLANS FOR GRADUATE SCHOOL AND ENROLLMENT IN GRADUATE SCHOOL, 1961-1964

(Per Cent Ever Enrolled for an Advanced Degree)

Anticipated Career Employer	Senior Plans for Graduate School		
	Definite	Tentative	Total
Self-employed	54 (169)	44 (117)	50 (286)
Private company	71 (917)	53 (405)	66 (1,322)
College, university . .	90 (1,445)	77 (344)	88 (1,789)
Research institute . .	90 (514)	66 (149)	84 (663)
Public welfare	60 (209)	36 (150)	50 (359)
Private welfare	64 (196)	41 (112)	56 (308)
Hospital	69 (448)	56 (248)	64 (696)
School system	64 (792)	65 (476)	64 (1,268)
Federal government . .	73 (596)	61 (278)	69 (874)

N	5,493
NA	112
NA, no plans	541
Total	6,146

It is safe to conclude from this table that the nature of the intended career is an important determinant of graduate school enrollment. The probability of realizing senior plans to enroll in graduate school is greater if the desired career requires advanced education than if it does not. Even in a field like social work, where academic employment is rare, those who anticipate academic employment are the most likely to enroll in graduate school.

Career activities and enrollment.--More than three-fourths of those who anticipated that their careers would include teaching or research realized their senior plans for enrollment in graduate school, but only about two-thirds of those who anticipated other career activities did so. Since this question allowed multiple responses, the data do not measure the only career activity expected, but all anticipated activities. Thus, the career activities listed in Table II.8 are not exclusive categories. In fact, respondents anticipated an average 2.3 career activities. Nevertheless, those whose choices included research were the most likely to have enrolled, and those who anticipated teaching were the next most likely to have done so.

TABLE II.8

ANTICIPATED CAREER ACTIVITIES, SENIOR PLANS FOR GRADUATE SCHOOL AND ENROLLMENT IN GRADUATE SCHOOL, 1961-1964

(Per Cent Ever Enrolled for an Advanced Degree)

Anticipated Career Activities	Senior Plans for Graduate School		
	Definite	Tentative	Total
Teaching	80 (2,147)	62 (875)	75 (3,022)
Research	86 (1,824)	64 (602)	81 (2,426)
Administration	67 (920)	54 (495)	63 (1,415)
Service	71 (1,016)	51 (535)	64 (1,551)
Supervision	67 (1,014)	50 (611)	60 (1,625)
Consultation	73 (1,031)	60 (496)	69 (1,527)

N	5,185
NA	366
None	54
NA, no plans	541
Total	6,146

The same pattern was found in each of the plans categories. Thus, the respondents who knew when they would enroll in graduate school and who anticipated teaching or research were the most likely to realize their senior plans for enrollment. This corresponds with the finding that respondents who knew when they would enroll in graduate school and who anticipated academic employers were the most likely to enroll (see Table II.7). Definite plans for graduate work and an orientation toward academic activities in an academic setting seem to increase the probability of enrollment in graduate school. This is particularly true of those who expected to study basic medical sciences, mathematics, or the physical sciences.

Summary

Chapter II has discussed some of the factors related to the realization of plans for enrollment in graduate school. About two-thirds of the seniors who anticipated enrolling in the selected science fields actually enrolled at least once for an advanced degree in the first three years after college graduation.

Plans for advanced study were importantly related to graduate enrollment. Those whose plans were definite were more likely than those whose plans were tentative to have actually enrolled.

Of those who did enroll, two-thirds enrolled in the field they had anticipated studying. Sex and family role were also related to graduate enrollment.

Men were more likely than women to have realized their plans, and non-parents of both sexes were more likely than parents to have done so.

Undergraduate academic performance was also a factor in graduate enrollment. The higher the level of academic performance, the more likely it was that plans for graduate enrollment would be realized.

The presence or absence of debts for undergraduate education was not related to the realization of plans for enrollment in graduate school.

Career goals were strongly related to realization of plans for enrollment. Respondents planning careers in academic environments, or including academic activities, such as teaching or research, were more likely to enroll than respondents with other career plans.

One other factor--anticipated field of study--was related to realization of plans for enrollment. Its influence, like the influence of senior plans, was found in addition to all the other relationships described above. Seniors anticipating advanced study in the basic medical sciences and physical sciences were the most likely to have enrolled in the first three years after college graduation, and those who anticipated advanced study in the health professional fields and social work were the least likely to have enrolled.

CHAPTER III

ACTIVITIES OF THOSE WHO ANTICIPATED ADVANCED STUDY BUT NEVER ENROLLED

Introduction

The college seniors who anticipate advanced study in the selected science fields constitute an important segment of the population. Many of the people needed to staff the nation's programs and maintain its technological progress will come from their ranks. Since advanced education is particularly important in the sciences, our first concern was with the realization of the plans of seniors for graduate work in the sciences.

As Chapter II showed, about one-third of the college seniors who anticipated advanced study in the selected science fields did not enroll at all in the first three years after college graduation. The groups least likely to have enrolled were women, parents, those with low academic performance, those with non-academic career expectations, those who had anticipated advanced study in health and social work, and those whose plans for advanced study were tentative.

These people constitute an important manpower resource. They have an interest in the scientific fields and a college education, both of which should qualify them for many scientific and technological tasks. An examination of the activities of this group during the three years after college graduation can provide a clue to the utilization of the college-trained in our society. Those concerned with manpower resources can then better plan for future needs.

Employment

The most commonly chosen alternative to advanced education was employment. Men might either take a civilian job or go into military service; women could either take jobs or be housewives. Thus, tables dealing with employment will control for sex. The text tables will show the average, by sex, of all anticipated fields of study. The data by anticipated fields of study are shown in Appendix III.

Fully eight out of ten non-students were employed in 1964. Virtually all the men (98 per cent) but only about two-thirds (65 per cent) of the women were thus occupied.

TABLE III.1

SEX AND EMPLOYMENT AMONG NON-STUDENTS IN 1964[a]

(Percentage Distribution)

Sex	Employed in 1964	N
Male	98	970
Female	65	1,231
Total	80	2,201

N	2,201
Enrolled . . .	3,945
Total . . .	6,146

[a] Respondents who wanted to attend graduate school in one of the selected science fields, but who did not enroll at all during the first three years after college graduation, will henceforth be called non-students.

Differences in employment by field were negligible among the men. The lowest proportion employed was among those who anticipated advanced study in the health professional fields--92 per cent. However, the maximum proportion of employed women did not quite reach 80 per cent (in the basic medical sciences); the minimum was 53 per cent (in the selected social sciences). The other women were undoubtedly housewives.

Anticipated field of advanced study probably indicates the differential possession of job skills that affect chances for employment.

Those who anticipated advanced study in the basic medical sciences, for example, may have laboratory experience and skills that would be useful in many technological jobs. Those who anticipated advanced study in the selected social sciences, on the other hand, probably had more diffuse training and might lack the specific skills needed by many employers.

This factor is probably more crucial for women than for men, as women just out of college may be less desirable employees than men. Men, particularly if married, are more likely to be stable employees than are women, who may get married and begin a family. As a result, employers may be more willing to hire and perhaps train men.

This combination of skills and possible employer preferences might explain the pattern of employment by anticipated field of study and sex.

Sex and 1964 employment field.--Table III.2 shows that men and women were employed in different fields in 1964. Less than half of either sex were employed in the selected science fields (30 per cent of the men and 48 per cent of the women), a majority having found employment in education or other fields. Less than 10 per cent of the men were employed in any scientific field except physical sciences, but one out of ten women were employed in social work, and one out of four were employed in the health professional fields.

In general, employment in the anticipated graduate field was not common. More than 40 per cent of the women who anticipated study in social work (41 per cent), mathematics (42 per cent), the basic medical sciences (48 per cent), and the health professions (95 per cent) were employed in their anticipated field. Otherwise, most women were employed in education. Sixty-nine per cent of the men who anticipated advanced study in social work, and 52 per cent of the men who anticipated study in the health fields, were employed in their anticipated field. Most other men were employed outside the selected science and education fields.[1] Overall, 22 per cent of the men and 38 per cent of the women were employed in their anticipated field of study.

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[1] These data are shown in Table A-III.2A.

TABLE III.2

SEX AND FIELD OF 1964 EMPLOYMENT

(Percentage Distribution)

Sex	Field of 1964 Employment										Per Cent Employed in Anticipated Field	Total Per Cent	N
	Basic Medical	Other Bioscience	Health	Social Work	Psychology	Social Science	Mathematics	Physical Science	Education	Other			
Male	1	1	6	7	1	--	3	11	12	57	22	99	772
Female . . .	6	1	25	10	*	--	3	3	35	17	38	100	777

N 1,549
NA, inapplicable . 652
Enrolled in 1964 . 3,945
Total 6,146

Thus, except for health and social work, the majority of college seniors who anticipated advanced study in the selected science fields, but who did not enroll, were not employed in these fields. Most men found employment in other fields not including education, and most women were employed in education or other non-scientific fields.

1964 employer.--Tables III.1 and III.2 have shown that the non-students were working, but generally not in the field they had anticipated studying in graduate school. On the basis of these tables, however, we would expect to find marked differences by sex in types of employers. Since women were primarily employed in education and the health professions, we would expect them to work primarily in schools and hospitals. Since men had more variegated fields of employment, we would expect them to have a greater variety of employers.

TABLE III.3

SEX AND 1964 EMPLOYER OF NON-STUDENTS

(Percentage Distribution)

Sex	1964 Employer[a]									Total Per Cent	N
	Self-employed	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government		
Male .	3	33	2	1	3	*	3	8	18	71	935
Female	1	16	6	3	10	2	18	33	7	98	802
Total	2	25	4	2	7	1	10	20	13	84	1,737

N	1,737
NA	13
Not employed in 1964	451
Ever enrolled . . .	3,945
Total	6,146

---

[a] Not shown: professional office, professional partnership, state government, local government, church, and other.

Private profit-making companies (33 per cent) and the federal government (18 per cent) were the only employers that employed as many as a tenth of the male non-students (Table III.3). Women were primarily employed by school systems (33 per cent), hospitals or clinics (18 per cent), and by private profit-making companies (16 per cent). Overall, the most common employers of the selected science non-enrollees were private companies (25 per cent), elementary and secondary school systems (20 per cent), and the federal government (13 per cent).

Feelings about the job.--This analysis of the 1964 activities of non-students has so far concentrated on the objective characteristics of their jobs. But the way a person feels about his job, how much he likes it, and how well he thinks he is doing are also important characteristics. College graduates who wanted to go to graduate school in a scientific field might be dissatisfied working for an elementary or secondary school system or working in a scientific field with people who may have had more academic training than they.

Academic preparation for the job.--Recent college graduates on their first job (as were most of the non-students) could have gotten their job training either on the job or in college. Even though most were not employed in their anticipated field of graduate study, their college education was an important part of their preparation for the job. Since a majority were not employed in fields for which they were presumably preparing, it is of considerable interest to see how well the non-students felt college prepared them for their jobs.

TABLE III.4

SEX AND ACADEMIC PREPARATION
FOR PRESENT JOB

(Per Cent Very Well Prepared)

	Per Cent	
Male	32	(770)
Female	46	(785)
N	1,555	
NA, inapplicable	646	
Ever enrolled .	3,945	
Total . . .	6,146	

Women were considerably more likely than men (46 per cent compared to 32 per cent) to feel that their academic preparation had been "very good." The explanation for this probably lies in several factors: First, women were more likely than men to be employed in education, where they could teach the subjects they had studied in college. Moreover, the skill requirements of jobs may differ by sex, so that women's jobs may be more suited to the skills they learned in college.

Differences by anticipated field of study were greatest in mathematics, where women were 32 per cent more likely than men to report feeling very well prepared. The minimum difference was in social work where men were 6 per cent more likely than women to feel very well prepared.[2]

Job satisfaction--The non-students were employed in fields they had not planned to study, and less than a majority felt that their academic preparation was very good. One would wonder, therefore, whether the non-students were very satisfied with their jobs and would expect, on the basis of the preceding tables, that women would be more satisfied with their jobs than men.

Table III.5 shows, however, that large proportions of both sexes were satisfied with their jobs. There were slight differences by anticipated field of graduate study and sex, so that women were more likely to have been satisfied than men in the other biosciences (by 17 per cent), social sciences (by 6 per cent), and mathematics (by 4 per cent), but men were more satisfied than women in the health fields (by 10 per cent) and physical sciences (by 24 per cent). Indeed, the women who had anticipated advanced study in the physical sciences were the least likely to have been satisfied with their jobs--only 63 per cent were satisfied.

Educational Plans

Does the high proportion of non-students satisfied with their 1964 jobs imply that they no longer want to go to graduate school? If they are satisfied with the jobs they have been able to obtain without graduate training, have they lost the desire for move advanced education?

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[2] These data are in Table A-III.4.

If they have not lost the desire to attend graduate school, do they expect to enroll? The last section of this chapter provides data on these questions.

TABLE III.5

SEX AND JOB SATISFACTION

(Percentage Distribution)

Sex	Job Satisfaction			Total Per Cent	N
	Satisfied	Neutral	Dissatisfied		
Male .	87	4	8	99	771
Female	84	5	11	100	784

N	1,555
NA, inapplicable.	646
Ever enrolled . .	3,945
Total	6,146

Desire to enroll.--Table III.6 shows that desire to enroll in graduate school is related to sex but not to family role. While 70 per cent of the male non-students would prefer to go to graduate school, only 46 per cent of the women would. Thus while most men did not lose their desire to obtain advanced training, most women did.

Family role was not related to preference for advanced training. Thus parents were no less likely than non-parents to desire to enroll in graduate school.

More than half the men who anticipated advanced study in each field (the minimum was 57 per cent in the social sciences) still preferred to go to school. In only three fields (physical sciences--67 per cent, other biosciences--54 per cent, and social sciences--52 per cent) did a majority of the women still prefer to go to school.[3]

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[3] These data are in Table A-III.6.

TABLE III.6

FAMILY ROLE AND DESIRE TO ENROLL IN GRADUATE SCHOOL

(Percentage Distribution)

Sex	Family Role			Total[a]
	Single	Married	Parent	
Male . .	71 (293)	69 (115)	67 (446)	70 (888)
Female .	47 (314)	50 (229)	44 (517)	46 (1,126)
Total	59 (607)	56 (344)	55 (963)	57 (2,014)

N	1,912
NA	187
Widowed, divorced, and separated . . .	102
Ever enrolled	3,945
Total	6,146

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[a] Including widowed, divorced, and separated, and no answer on family role.

Plans to enroll.--The desire to attend school is only one aspect of educational plans. Another very important part, as shown in Chapter II by the persistence of the plans effect, is the existence of plans to enroll. The plans index employed earlier is not relevant to plans for future enrollment in graduate school, but in 1964 non-students were asked if they were planning to enroll in graduate school. Table III.7 gives the distribution by sex and family role.

Sex and family role both influenced expectation of future enrollment. Men were more likely than women to plan to enroll (67 per cent compared to 51 per cent). Single men and all single people were more likely than those with mates and/or children to have such plans, but among women family role did not make much difference.

The differences by anticipated field of study were minor: the only exceptional fields were mathematics, which had an unusually high (80 per cent), and health, which had an unusually low (32 per cent) proportion of men planning to enroll.

TABLE III.7

SEX, FAMILY ROLE, AND EXPECTATION OF ENROLLMENT
(Per Cent Planning Plus Per Cent Probably Planning To Enroll)

Sex	Family Role			Total[a]
	Single	Married	Parent	
Male . . .	77 (206)	64 (87)	63 (338)	67 (650)
Female . .	52 (273)	48 (211)	51 (467)	51 (1,013)
Total.	63 (479)	53 (298)	56 (805)	57 (1,663)

N	1,582
NA	90
NA, widowed, divorced, and separated	71
Inapplicable	448
Ever enrolled	3,945
Total	6,146

[a] Includes widowed, divorced, separated, and no answer on family role.

Job satisfaction also influenced plans to enroll. Non-students who were dissatisfied with their 1964 jobs were the most likely to plan to enroll, and those who were neutral about their jobs were least likely to have such plans.

Obviously, those non-students who were least satisfied with their jobs were most anxious to return to school for more training. But those non-students who were neutral about their jobs were less likely to plan to enroll in graduate school than the non-students who were satisfied. In each case where comparisons are possible, men, regardless of job satisfaction, were more likely than women to plan to enroll in graduate school.

TABLE III.8

SEX, JOB SATISFACTION, AND EXPECTATION OF ENROLLMENT

(Per Cent Planning Plus Per Cent Probably Planning To Enroll)

Sex	Job Satisfaction		
	Satisfied	Neutral	Dissatisfied
Male	64 (464)	* (17)	73 (41)
Female	51 (516)	* (37)	67 (67)
Total . .	58 (980)	42 (54)	69 (108)

N	1,142
NA	1,059
Ever enrolled	3,945
Total . .	6,146

Chapter II showed that plans to enroll for graduate study were an important determinant of actual enrollment. Reasoning by analogy, the data in tables III.7 and III.8 can be interpreted to indicate that many of the respondents who are planning to enroll (especially the men without families who are dissatisfied with their present job) will actually do so.

Summary

People who had failed to enroll in a selected science field despite plans to do so were working in 1964. In general, non-students were not employed in the fields they had anticipated studying. Women were most often employed in education and men in other fields. Most of the men were employed by private companies, school systems, or the federal government.

Overall, a majority felt that they lacked very good academic preparation for their jobs, but they were still satisfied with them. A majority wanted and expected to enroll in graduate school in the future, although those with families or those who were satisfied with their jobs were less likely to have this expectation.

CHAPTER IV

THE CAREER PLANS OF GRADUATE STUDENTS IN THE SCIENCES

Introduction

If one is interested in forecasting the national supply of science manpower, knowledge of the educational behavior of science students is not sufficient. Of course, students of the sciences are the pool from which practicing scientists will be drawn, but it is the career plans of these students that crucially affect the distribution of science manpower.

This chapter will be devoted to an analysis of the career plans of students who have enrolled at least once for an advanced degree in a selected science field. (This is the group whose patterns of enrollment were analyzed in Chapter I.) We will be interested in the kinds of careers they plan, the kinds of work they want to do, and the settings they anticipate working in. In particular, we are interested in how their graduate school experiences relate to their anticipated careers.

Many students anticipated college teaching or working for research institutes. Some expected to work in secondary and elementary school systems. Regardless of the exact positions these students will occupy in the labor force, it is important to know what kinds of factors affect their recruitment to each of these various professions. Our concern will be to examine the kinds of enrollment experiences and personal characteristics that affect the choice of profession by graduate students.

Three aspects of careers will be analyzed--career field, employer, and activities. Each of these aspects will be analyzed, in turn, by sex (known to bear strong relationships to careers), enrollment patterns, and course load. Some will be analyzed by anticipated date of completing the highest degree expected. Tables dealing with these variables and field of study are presented in Appendix IV.

Career Field

Sex.--Table IV.1 shows that relatively high proportions of both men and women reported that their long-run career would be in the same fields they studied as graduate students. Men were, in general, more likely than women to anticipate a career in their graduate field of study. The average difference between the sexes was 7 per cent. When graduate field of study is controlled, larger differences appear in some fields--physical sciences (25 per cent) and mathematics (14 per cent). Women were more likely than men to expect careers in their graduate study field in sociology and anthropology and in social work (by 5 and 13 per cent respectively).[1] The general pattern of men remaining in their field more frequently than women comes about because many women will be housewives. This reduces the proportion having the same graduate study and career field.

TABLE IV.1

SEX AND CAREER FIELD

(Per Cent with Same Graduate and Career Field)

	Per Cent
Male	66 (2,927)
Female	59 (1,467)

When James A. Davis studied the relationship between freshman and senior year career field in an earlier report f this study, he found that men were more likely than women to maintain their preference in the physical and social sciences, but not in the biological sciences.[2] Although his fields are somewhat different from those being considered here, and we are comparing graduate study field and career field, the fact that his findings and ours are opposed for the biological and social sciences suggests that the processes of career choice are somewhat different in college and graduate school.

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[1] See Table A-IV.1.

[2] James A. Davis, Undergraduate Career Decisions (Chicago: Aldine Publishing Co., 1965), pp. 137-52.

It may well be that, since graduate students have a better idea of what the people in each field actually do, their choices are made on the basis of better information. However, because of discrepancies in field definition and the types of comparisons made, these differences may be more apparent than real.

Sex and course load.--Among students enrolled in 1964, a very strong positive relationship existed between course load and having the same graduate study and career field. Students carrying a heavy course load were much more likely than those with a light course load (80 per cent compared to 12 per cent) to anticipate a career in their graduate field. The difference was greater among men (75 per cent) than among women (49 per cent). Apparently, students carrying a light course load may have no intention of using their course work to attain advanced standing in their fields.

TABLE IV.2

SEX, COURSE LOAD, AND CAREER FIELD

(Per Cent with Same Graduate and Career Fields)

Course Load	Sex		Total
	Male	Female	
Heavy . .	84 (1,877)	70 (734)	80 (2,611)
Light . .	9 (347)	21 (105)	12 (452)

N 3,063
Not enrolled in 1964 1,331
Total 4,394

Sex and enrollment.--Table IV.3 adds to Table Iv.1 a control for patterns of enrollment, and generally shows that those who had been continuously enrolled or who had finished their highest degree were more likely than those with other enrollment patterns to anticipate a career in the field they had studied.

TABLE IV.3

SEX, ENROLLMENT PATTERN, AND CAREER FIELD
(Per Cent with Same Graduate and Career Field)

Enrollment Pattern	Sex	
	Male	Female
Continuous . . .	77 (1,608)	65 (381)
Delayed and interrupted .	58 (616)	63 (458)
Dropout	47 (635)	48 (529)
Completed . . .	70 (68)	90 (99)

Total N . . 4,394

The control for enrollment also alters the basic pattern of sex differences. Only among the continuously enrolled were men more likely than women to remain in the same field. In all other enrollment patterns, women were more likely than men to remain loyal to their graduate study field.[3] Men who dropped out were the least loyal to their graduate field, followed by men who delayed or interrupted their studies. The same relationship held among women, although they were slightly more loyal than men with the same enrollment pattern.

Men who discontinued graduate work after receiving a master's or professional degree were much less loyal to their study field than were women who discontinued after receiving these degrees. Perhaps men felt that they could accomplish less with this degree than did women. The differences between men and women who interrupted or delayed or who dropped out are too small to interpret.

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[3] Loyalty is defined as having the same graduate study and career fields.

The general pattern of findings, then, shows that: (1) Continuously enrolled men were more likely than continuously enrolled women to remain loyal to their graduate study field. (2) Otherwise, women were more likely to be loyal than men. Sociology and anthropology were the only fields in which continuously enrolled women were more likely to expect to remain loyal than continuously enrolled men. Male dropouts in the other biosciences, psychology, math, and the physical sciences were also exceptions in that they were more loyal than female dropouts in these fields.[4]

Sex, enrollment, and course load.--Generally speaking, adding the course load factor to Table IV.3 shows the same picture as before. (Table IV.4). Men were more likely than women to remain loyal to their graduate study fields only if they were enrolled continuously and for a heavy course load. In all other comparisons there were virtually no differences, or the women were more likely than the men to remain loyal to their study fields.

TABLE IV.4

SEX, ENROLLMENT PATTERN, COURSE LOAD, AND CAREER FIELD
(Per Cent with Same Graduate and Career Fields)

Enrollment Pattern and Course Load	Sex			
	Male		Female	
Continuous:				
Heavy	88	(1,383)	75	(319)
Light	12	(225)	13	(62)
Delayed and interrupted:				
Heavy	69	(494)	66	(415)
Light	4	(122)	33	(43)

N 3,063
Not enrolled in 1964 . 1,331
Total 4,394

---

[4] See Table A-IV.2 for the data by field of graduate study.

The findings that have emerged on career field have shown that men, in general, were more likely than women to remain loyal to their graduate study field. When controls for enrollment and course load were added, however, it was seen that only the continuously enrolled (and among the continuously enrolled those who were carrying a heavy course load in 1964) men were more likely than women to remain loyal to the field of study.

Sex and career employer.--Table IV.5 shows the distribution, by sex, of the respondents' anticipated career employers. The question that elicited this information permitted multiple answers, so percentages total more than 100 per cent. Further, only those employers with an overall frequency of 10 per cent, or a special relevance to a scientific field, are shown.

The most frequently anticipated employer among the men was a college or university (48 per cent), followed by business (30 per cent). Among the women, however, school systems (36 per cent) were the most frequently anticipated employers, followed by colleges and universities (34 per cent). No other employer was expected by as many as one-fourth of either the men or the women.

The graduate students are a special group, expecting academic careers much more frequently than does the sample as a whole. As seniors, only 12 per cent of the sample expected to be working for colleges or universities.[5] Although not a direct measure of career employment, career field is directly related to it. In the second year after graduation 16 per cent of the men and 51 per cent of the women said that their career field was education.[6] While approximately this proportion of the male graduate students were planning employment by a school system, far fewer female graduate students were doing so. Thus, all indications point to the fact that graduate students in the sciences anticipate career employment in colleges and universities much more frequently than the average college graduate. In particular, the female graduate student was more likely than the average female college graduate to expect employment in colleges and universities and less likely to expect employment in elementary or secondary schools.

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[5] James A. Davis, Great Aspirations (Chicago: Aldine Publishing Co., 1964), p. 201.

[6] Joe L. Spaeth and Norman Miller, Trends in the Career Plans and Activities of June, 1961, College Graduates (Chicago: National Opinion Research Center, 1965), p. 12.

TABLE IV.5

SEX AND CAREER EMPLOYMENT[a]

(Percentage Distribution)

Sex	Career Employer								Total Per Cent	N
	Private Company	College or University	Non-profit Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government		
Male . .	30	48	16	4	3	8	14	19	142	2,912
Female .	11	34	13	10	11	23	36	10	148	1,459

N 4,371
NA 23
Total 4,394

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[a] Only those employers with an average response rate of 10 per cent or special relevance to a scientific field are shown.

Generally, in study fields involving skills needed by business and industry, higher than average proportions anticipated employment in these areas, while in fields oriented toward scholarship or service, high proportions were anticipating employment in an academic or service milieu.[7]

Thus, both men and women in the physical sciences and mathematics were more likely than the average for their sex to anticipate employment in business. Women in the basic medical sciences also fell into this group.

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[7] This data is contained in Table A-IV.3.

Psychologists anticipated employment in elementary and secondary schools, health students anticipated employment in hospitals and clinics, and social scientists and social workers anticipated employment in public and private welfare agencies, all with more than average frequency.

Students of both sexes in the basic medical sciences, other biosciences, and social sciences, and men in the physical sciences also anticipated employment in colleges and universities with greater than average frequency.

In general, Table IV.3 shows that the students in the service fields (social work and the health professions) were unlikely to expect employment in colleges or universities, whereas those in the basic medical sciences, other biosciences, social sciences, and physical sciences were quite likely to expect this type of employment.

Sex, course load, and career employer.--Course load was also related to choice of career employer. Both men and women who were carrying a heavy course load in 1964 were much more likely to anticipate employment in colleges, universities, and research institutes than those who were carrying a light course load.

Carrying a heavy course load was also negatively associated with plans to teach in a secondary school system. Students who carried a heavy course load were more likely than those who carried a light course load to anticipate employment in welfare agencies, hospitals, and the federal government. Sex differentials were maintained: Men were most likely to anticipate college or university employment, but women who carried a heavy course load anticipated college or university employment as often as they anticipated school system employment. A clear picture emerges: students who took heavy course loads anticipated employment in higher education, while those who took light course loads anticipated employment in secondary education.

Sex, date of highest degree, and career employer.--Much the same pattern results when expected date of receipt of the highest degree is used in the place of course load. Students who expect to complete their degree work sooner are more likely to anticipate employment in higher education, and those who expect to finish later are more likely to expect career employment in secondary education.

TABLE IV.6

SEX, COURSE LOAD, AND ANTICIPATED CAREER EMPLOYER

(Percentage Distribution)

Sex and Course Load	Anticipated Career Employer								N
	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government	
Male:									
Heavy	5	57	20	5	3	8	11	20	1,867
Light	5	38	6	*	*	5	30	15	347
Total 1964 .	5	54	18	4	2	7	14	19	2,214
Female:									
Heavy	1	43	16	10	10	23	38	11	712
Light	1	27	2	4	4	7	68	6	104
Total 1964 .	1	41	14	9	9	21	41	10	816

N 3,030
NA 33
Not enrolled in 1964 . 1,331
Total 4,394

Thus, sex, course load, and anticipated completion date are all related to career expectations. Men, particularly those who carried a heavy course load or who expected to finish their studies prior to 1967, thought they would be employed in higher education. Women with these characteristics also expected academic employment, but not as frequently as the men.

Sex, enrollment pattern, and career employer.--Table IV.8 controls for enrollment patterns as well as sex. As expected, the findings show that continuously enrolled graduate students were the most likely to anticipate employment in a college or university, and dropouts were the least likely to do so. Continuously enrolled students were also the most likely to anticipate career employment in research institutes.

TABLE IV.7

SEX, DATE HIGHEST DEGREE, AND ANTICIPATED CAREER EMPLOYER

(Percentage Distribution)

Sex and Highest Degree Date	Anticipated Career Employer								N
	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government	
Male:									
Before 1967 .	34	83	27	1	*	4	*	21	853
1967 or later	23	66	21	7	4	11	14	24	585
Female:									
Before 1967 .	13	88	33	2	2	33	4	9	92
1967 or later	4	68	17	6	4	16	31	9	108

N	1,638
NA, not applicable . .	1,425
Not enrolled in 1964 .	1,331
Total	4,394

Some of the sex differences noted in Table IV.5 have disappeared in Table IV.8. Most notable is the proportion of men and women anticipating employment in colleges and universities. Overall, men were 14 per cent more likely than women to have had this expectation, but among all but the "completed," rates by enrollment pattern are about the same. Another difference that disappears is in expectation for employment in a school system--among the completed, men are now more likely than women to expect this type of employment.

This table shows that educational behavior is importantly related to career plans. Women are usually more likely than men to plan to be employed by school systems and less likely to plan employment in colleges and universities. However, when men and women have the same pattern of education, these differences are modified: women who enrolled contin-

TABLE IV.8

SEX, ENROLLMENT, AND CAREER EMPLOYER[a]

(Percentage Distribution)

Sex and Enrollment	Career Employer								Total Per Cent	N
	Private Company	College or University	Non-profit Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government		
Male:										
Continuous	28	50	21	2	1	7	8	20	137	1,604
Delayed and interrupted.	24	32	9	8	5	9	29	18	144	610
Dropout	37	32	10	5	5	8	15	20	142	630
Completed	35	16	9	9	12	13	24	20	138	68
Female:										
Continuous	13	49	17	5	6	19	32	13	154	381
Delayed and interrupted.	6	32	11	13	11	22	48	8	151	453
Dropout	14	28	13	10	10	25	33	10	143	528
Completed	10	21	6	12	26	37	13	4	126	97

N	4,371
NA	23
Total .	4,394

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[a] Only those employers with an average response rate of 10 per cent or a special relevance to a scientific field are shown.

uously or who delayed or interrupted their graduate study were as likely as men to expect to be employed by colleges or universities. Having followed the same educational path to an occupational goal, they expect the goal to be the same.

The effects of field of study, however, are not destroyed by the enrollment pattern.[8] Even among continuously enrolled students, relatively few in social work, health, or psychology anticipated academic employment. In the other fields, from 50 to 80 per cent did so. Although enrollment pattern alters findings by sex, findings by field of graduate study remain essentially the same. Both field and enrollment pattern were crucial determinants of anticipated career employer.

In analyzing the factors that affected anticipated career employer, several patterns emerged. First, sex was an important determinant, men being more likely than women to anticipate employment in higher education and less likely to anticipate employment in school systems. Second, both course load and anticipated date of receipt of the highest degree had similar effects. Those students who carried a heavy course load or those who expected their degree prior to 1967 were more likely than those who carried a light course load or those who would finish in 1967 or later to expect employment in higher education, and less likely to expect employment in school systems. Third, men and women who were continuously enrolled were about equally likely to anticipate employment in higher education, but women were still more likely than men to anticipate school system employment. Although there are some minor deviations from these findings, joint consideration of these factors leaves the general picture unchanged.

Sex and career activities.--Scientists, wherever they work and in whatever field, engage in certain similar activities. Since graduates most commonly anticipate working for schools, colleges, business, and hospitals, teaching, research, administration, and service to patients or clients should be expected components of their expected career activities.

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[8] This can be seen in Table A-IV.4.

Table IV.9 shows that teaching was the most commonly anticipated career activity, being anticipated by almost two-thirds of both men and women. Research was the second most commonly anticipated activity, but men (61 per cent) were more likely than women (40 per cent) to expect this activity. Women expected service almost as frequently as they expected research, but men expected service less than half as frequently as they expected research. The sexes showed very different patterns of career activities, as illustrated by the following ranking:

Men	Women
teaching	teaching
research	research
consultation	service
administration	consultation
supervision	supervision
service	administration

Women place service higher and administration lower than do men.

Sex, course load, and career activities.--When only those students who were enrolled in 1964 are considered, the same general pattern holds: teaching was the most commonly anticipated activity of both sexes (although women were more likely than men to have held this expectation), followed by research. Those students who carried a heavy course load were, however, less likely than those who carried a light course load to anticipate teaching, but they were more likely to anticipate research.

One of the main purposes of graduate school is to train researchers. It is not surprising, therefore, that those men who carried a heavy course load were more likely to anticipate research than those who did not carry a heavy course load. Women, however, were more likely than men to anticipate employment in secondary school systems. Many of the women plan to teach in secondary schools where they will not have the opportunity to do research. This would account for the higher proportion of women anticipating teaching and the lower porportion anticipating research.

TABLE IV.9

SEX AND CAREER ACTIVITIES[a]

(Percentage Distribution)

Sex	Career Activities						Total Per Cent	N
	Teaching	Research	Administration	Service	Supervision	Consultation		
Male . .	62	61	31	25	28	32	239	2,845
Female .	63	40	11	36	22	30	202	1,448

N 4,293
NA 101
Total . 4,394

[a] Selected activities only; "none of these" not shown.

Sex, enrollment, and career activities.--As Table IV.10 shows, students enrolled in 1964 (those with continuous or delayed and interrupted enrollment patterns) were more likely than other students to anticipate teaching or research.

Women who enrolled continuously, delayed, interrupted, or dropped out of graduate school were more likely than men to anticipate teaching, but men with all enrollment patterns anticipated research more frequently than women.

Field variations continued to exist when sex and enrollment were controlled. Respondents in the basic medical, other biological, and physical sciences were more likely than the average to anticipate research activities, especially if they had been continuously enrolled. The same was true of teaching, with the exception of the physical sciences. Students

TABLE IV.10

SEX, COURSE LOAD, AND ANTICIPATED CAREER ACTIVITIES

(Percentage Distribution)

Sex and Course Load	Anticipated Career Activities							N
	Teaching	Research	Administration	Service	Supervision	Consultation	None	
Male:								
Heavy.	65	69	26	25	23	33	*	1,852
Light.	67	43	39	17	33	26	*	341
Total enrolled in 1964 . . .	65	65	28	24	25	32	*	2,193
Female:								
Heavy.	69	46	12	39	22	34	*	713
Light.	89	19	7	14	12	28	1	103
Total enrolled in 1964 . . .	71	44	11	36	21	33	*	816

N.	3,009
NA	54
Not enrolled in 1964	1,331
Total.	4,394

TABLE IV.11

SEX, ENROLLMENT PATTERN, AND CAREER ACTIVITIES[a]

(Percentage Distribution)

Sex and Enrollment Pattern	Career Activities				Total Per Cent	N
	Teaching	Research	Service	Administration		
Male:						
Continuous . . .	67	74	22	26	189	1,581
Delayed and interrupted .	61	43	31	33	168	601
Dropout	49	49	27	39	164	603
Completed . . .	42	40	50	48	180	60
Female:						
Continuous . . .	70	56	31	8	165	378
Delayed and interrupted .	70	33	39	14	156	454
Dropout	58	36	34	11	139	522
Completed . . .	31	35	62	14	142	94

N 4,293
NA 101
Total . 4,394

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[a] Consultation, supervision, and "none of these" not shown.

in social work and health were particularly unlikely to anticipate these activities.[9]

Sex, enrollment, course load, and career activities.--Women, with their greater orientation to school teaching, were more likely than men to anticipate teaching in all enrollment categories except continuous-heavy course load, and men were more likely to anticipate research except in the delayed and interrupted-light course load categories. In general, the patterns established in the earlier tables persisted.

Sex, expected date of highest degree, and career activities.--The date expected for completion of the highest degree made no important difference in the proportion of either men or women who expected to teach. However, students who expected to complete their degree before 1967 were much more likely to anticipate research activities than were those students who did not expect to finish before 1967. The students who expected to finish their degrees in 1967 or later, however, were more likely to expect all other career activities.

Career activities, like career employer, were affected by sex, course load, date highest degree was expected, and enrollment. The proportion of students anticipating teaching was not importantly or consistently affected by these factors. The proportion anticipating research was. The same general pattern was seen with regard to research as was seen with regard to employment in higher education in the preceding set of tables. Men, continuously enrolled, carrying a heavy course load, and expecting to finish their degrees prior to 1967 were the most likely to anticipate that their career activities would include research. This was seen to be the case for the factors singly and in combination.

Summary

This chapter has analyzed the career expectations of graduate science students with different enrollment experiences. The following findings emerged:

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[9] See Tables A-IV.5 and A-IV.6.

TABLE IV.12

SEX, ENROLLMENT PATTERN, COURSE LOAD, AND CAREER ACTIVITIES

(Percentage Distribution)

Sex and Enrollment Pattern	Course Load	Career Activities							N
		Teaching	Research	Administration	Service	Supervision	Consultation	None	
Male:									
Continuous	Heavy	67	77	24	21	20	30	*	1,367
	Light	62	48	35	22	32	32	*	219
Delayed and interrupted	Heavy	56	44	30	36	31	37	1	485
	Light	75	34	43	7	32	16	*	122
Female:									
Continuous	Heavy	67	61	8	34	18	31	*	321
	Light	84	24	5	13	8	29	*	60
Delayed and interrupted	Heavy	66	32	14	41	24	35	*	399
	Light	93	35	9	14	16	23	*	43

N	3,009
NA	54
Not enrolled in 1964.	1,331
Total	4,394

TABLE IV.13

SEX, DATE HIGHEST DEGREE IS EXPECTED, AND CAREER ACTIVITIES

(Percentage Distribution)

Sex and Date Highest Degree Is Expected	Career Activities							N
	Teaching	Research	Administration	Service	Supervision	Consultation	None	
Male:								
Prior to 1967	77	93	22	6	20	28	*	852
1967 or later	71	68	32	23	27	33	*	577
Female:								
Prior to 1967	75	98	4	28	8	21	-	92
1967 or later	76	63	15	30	16	37	*	107

N	1,628
NA	15
Not applicable.	2,751
Total . . .	4,394

1. Men were more likely than women to be planning careers in the fields they had studied as graduate students. Women, however, may have been planning to use the subjects they studied in graduate school as elementary or secondary school teachers.

2. Men most frequently anticipated being employed by colleges or universities, while women anticipated employment in elementary and secondary schools with greatest frequency.

3. Men anticipated teaching and research with greatest frequency. Women anticipated teaching as frequently as men, but were much less likely to anticipate research.

4. Continuously enrolled students were more likely to stay in the same field, anticipate being employed by a college or a university, and expect teaching or research as part of their career activities. Continuously enrolled men and women expected academic employment with equal frequency.

5. A heavy course load heightened the probability of staying in the same field, of expecting college or university employment, and of anticipating research activities during the career.

6. Expecting to complete the highest degree prior to 1967 also heightened the probability of expecting college employment and career activities in research.

APPENDIX I

TABLE A-I.1

GRADUATE FIELD OF STUDY, SEX, AND ENROLLMENT PATTERN IN GRADUATE SCHOOL

(Percentage Distribution)

Graduate Field	Sex	Enrollment Pattern				Total Per Cent	N
		Continuous	Delayed and Interrupted	Drop-out	Completed		
Basic medical sciences . . .	Male	73	16	9	2	100	187
	Female	45	37	16	2	100	93
Other biosciences	Male	54	17	26	4	101	265
	Female	42	18	34	6	100	90
Total biosciences . .	Male	62	17	19	3	101	452
	Female	44	27	25	4	100	183
Health fields . .	Male	68	19	11	3	101	234
	Female	8	32	53	7	100	184
Social work . . .	Male	11	44	35	10	100	102
	Female	7	33	32	28	100	156
Psychology . . .	Male	45	31	22	2	100	670
	Female	28	38	32	2	100	608
Social sciences .	Male	62	19	18	1	100	90
	Female	55	23	18	3	99	65
Mathematics . . .	Male	46	22	31	2	101	382
	Female	16	19	53	12	100	114
Physical sciences	Male	63	14	20	2	99	997
	Female	34	17	45	4	100	157
Total, all fields . .	Male	55	21	22	2	100	2,927
	Female	26	31	36	7	100	1,467

Total N 4,394

TABLE A-I.2

GRADUATE FIELD, SEX, FAMILY STATUS, AND ENROLLMENT PATTERN

(Percentage Distribution)

Men							
Graduate Field	Family Role	Enrollment Pattern				Total Per Cent	N
		Continuous	Delayed and Interrupted	Dropout	Completed		
Basic medical sciences	Single	80	12	7	1	100	83
	Married	80	14	7	-	101	44
	Parents	62	24	13	2	101	55
Other biosciences.	Single	54	17	27	2	100	128
	Married	56	12	33	-	101	43
	Parents	51	17	23	9	100	88
Total biosciences . . .	Single	64	15	19	2	100	211
	Married	58	13	20	-	101	87
	Parents	55	20	19	6	100	143
Health fields . .	Single	85	7	8	-	100	74
	Married	64	28	6	2	100	89
	Parents	57	15	22	7	101	60
Social work . . .	Single	6	49	37	9	101	35
	Married	24	52	12	12	100	25
	Parents	5	38	50	8	101	40
Psychology	Single	33	39	27	2	101	250
	Married	66	19	13	2	100	134
	Parents	44	29	26	1	100	248
Social sciences .	Single	76	15	10	-	101	41
	Married	*	*	*	*	*	16
	Parents	30	33	37	-	100	27
Mathematics . . .	Single	58	10	32	1	101	123
	Married	41	38	18	3	100	93
	Parents	40	23	36	1	100	154
Physical sciences.	Single	67	14	16	2	99	408
	Married	68	18	13	1	100	241
	Parents	55	13	32	1	101	318

TABLE A-I.2--Continued

		Women					
		Enrollment Pattern					
Graduate Field	Family Role	Continuous	Delayed and Interrupted	Dropout	Completed	Total Per Cent	N
Basic medical sciences	Single	38	45	16	-	99	55
	Married	*	*	*	*	*	9
	Parents	40	45	10	5	100	20
Other biosciences.	Single	54	8	33	6	101	52
	Married	*	*	*	-	*	19
	Parents	*	*	*	*	*	14
Total biosciences . . .	Single	46	27	24	3	100	101
	Married	39	28	28	4	99	28
	Parents	32	35	24	9	100	34
Health fields . .	Single	4	41	47	8	100	100
	Married	7	22	64	7	100	45
	Parents	27	19	50	4	100	26
Social work . . .	Single	7	42	18	32	99	81
	Married	6	30	36	28	100	47
	Parents	*	*	*	*	*	18
Psychology	Single	24	50	22	3	99	258
	Married	29	38	31	2	100	166
	Parents	32	24	43	1	100	147
Social sciences .	Single	68	18	13	-	99	38
	Married	*	*	*	-	*	10
	Parents	*	-	*	*	*	7
Mathematics . . .	Single	18	22	44	16	100	50
	Married	20	27	54	-	101	41
	Parents	4	-	68	27	99	22
Physical sciences.	Single	29	25	40	6	100	68
	Married	56	19	23	2	100	43
	Parents	9	3	89	-	101	35

N 4,194
NA 200
Total . 4,394

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*Less than one-half of 1 per cent, or base too small to percentage.

TABLE A-I.3

GRADUATE FIELD OF STUDY, API, AND ENROLLMENT PATTERN

(Percentage Distribution)

Graduate Field	API	Enrollment Pattern				Total Per Cent	N
		Continuous	Delayed and Interrupted	Drop-out	Completed		
Basic medical sciences	High	77	15	5	2	99	92
	Medium	70	20	10	-	100	99
	Low	44	35	17	4	100	86
Other biosciences.	High	51	15	26	7	99	72
	Medium	58	17	22	4	101	137
	Low	44	19	34	4	101	140
Total biosciences . . .	High	66	15	15	4	100	164
	Medium	63	18	17	2	100	236
	Low	44	25	28	4	100	226
Health fields . .	High	25	35	37	4	101	57
	Medium	34	33	25	8	100	198
	Low	58	11	30	1	100	154
Social work . . .	High	11	26	20	43	100	35
	Medium	9	33	34	24	100	131
	Low	7	50	37	7	101	90
Psychology	High	45	30	21	4	100	272
	Medium	37	35	27	1	100	506
	Low	32	36	30	1	99	493
Social sciences .	High	56	25	16	2	99	55
	Medium	68	9	19	4	100	57
	Low	51	30	19	-	100	43
Mathematics . . .	High	52	22	21	6	101	200
	Medium	32	20	44	4	100	179
	Low	27	24	48	1	100	115
Physical sciences.	High	74	7	17	2	100	456
	Medium	53	20	25	2	100	440
	Low	43	19	34	3	99	235
Total, all fields . . .	High	58	18	19	5	100	1,239
	Medium	42	26	27	4	99	1,747
	Low	37	28	32	2	99	1,356

N 4,342
NA 52
Total . 4,394

TABLE A-I.4

GRADUATE FIELD OF STUDY, HIGHEST DEGREE EXPECTED, AND ENROLLMENT PATTERN

(Percentage Distribution)

Graduate Field	Highest Degree Expected	Enrollment Pattern				Total Per Cent	N
		Continuous	Delayed and Interrupted	Dropout	Completed		
Basic medical sciences .	Professional	62	33	4	--	99	24
	Master's	32	43	18	6	99	77
	Doctorate	80	12	8	--	100	172
Other biosciences	Professional	*	*	*	*	*	18
	Master's	26	25	35	14	100	107
	Doctorate	74	14	12	--	100	186
Total biosciences . .	Professional	69	26	5	--	100	42
	Master's	29	33	28	11	101	184
	Doctorate	77	13	10	--	100	358
Health fields	Professional	63	22	9	5	99	227
	Master's	15	39	39	7	100	102
	Doctorate	34	32	34	--	100	41
Social work	Professional	9	41	25	25	100	153
	Master's	--	31	26	43	100	35
	Doctorate	15	42	43	--	100	53
Psychology	Professional	41	33	25	2	101	64
	Master's	22	45	30	4	101	659
	Doctorate	60	24	16	--	100	494
Social sciences	Professional	*	*	*	*	*	7
	Master's	42	30	20	8	100	40
	Doctorate	70	19	11	--	100	99

TABLE A-I.4--Continued

Graduate Field	Highest Degree Expected	Enrollment Pattern				Total Per Cent	N
		Con-tinuous	Delayed and In-terrupted	Dropout	Com-pleted		
Mathematics	Professional	*	*	*	*	*	10
	Master's	24	30	36	9	99	214
	Doctorate	62	18	20	--	100	218
Physical sciences	Professional	24	27	48	--	99	33
	Master's	32	28	32	8	100	322
	Doctorate	78	10	13	--	101	725
Total, all fields . .	Professional	42	29	19	10	100	536
	Master's	24	37	31	7	99	1,556
	Doctorate	68	16	15	--	99	1,986

N 4,080
NA 314
Total 4,394

TABLE A-I.5A

GRADUATE FIELD OF STUDY, DATE HIGHEST DEGREE EXPECTED, AND ENROLLMENT PATTERN

(Per Cent Expecting Doctorate in 1966 or Earlier among Those Enrolled in 1964)

Graduate Field	Enrollment Pattern	
	Continuous	Delayed and Interrupted
Basic medical sciences . .	80 (136)	24 (21)
Other biosciences	61 (135)	4 (24)
Total biosciences . . .	70 (271)	13 (45)
Health fields	* (10)	- (12)
Social work	- (4)	- (9)
Psychology	45 (292)	20 (112)
Social sciences	48 (70)	- (19)
Mathematics	63 (135)	22 (37)
Physical sciences	80 (559)	28 (68)
Total, all fields . .	66 (1,341)	18 (302)

N	1,643
Not applicable .	2,751
Total . . .	4,394

TABLE A-I.5B

FIELD OF GRADUATE STUDY, ENROLLMENT PATTERN, AND DATE DOCTORATE EXPECTED, BY STUDENTS ENROLLED IN 1964

(Cumulative Percentage Distribution)

Graduate Field	Enrollment Pattern	Date Doctorate Is Expected									N
		1964	1965	1966	1967	1968	1969	1970	After 1970	Median	
Basic medical sciences	Continuous .	6	50	80	92	93	95	96	100	1965	136
	Delayed and interrupted	*	*	*	*	*	*	*	*	*	21
Other bio-sciences	Continuous .	3	28	61	84	88	93	99	100	1966	135
	Delayed and interrupted	*	*	*	*	*	*	*	*	*	24
Health fields	Continuous .	*	*	*	*	*	*	*	*	*	10
	Delayed and interrupted	*	*	*	*	*	*	*	*	*	12
Social work	Continuous .	*	*	*	*	*	*	*	*	*	4
	Delayed and interrupted	*	*	*	*	*	*	*	*	*	9
Psychology	Continuous .	3	20	45	61	72	80	94	100	1967	292
	Delayed and interrupted	-	5	20	31	51	62	85	100	1968	112
Social sciences	Continuous .	4	27	49	79	84	93	99	100	1967	70
	Delayed and interrupted	*	*	*	*	*	*	*	*	*	19

TABLE A-I.5B--Continued

Graduate Field	Enrollment Pattern	Date Doctorate Is Expected									N
		1964	1965	1966	1967	1968	1969	1970	After 1970	Median	
Mathematics	Continuous .	10	36	63	78	84	92	94	100	1966	135
	Delayed and interrupted	*	*	*	*	*	*	*	*	*	37
Physical sciences	Continuous .	5	48	80	88	92	94	97	100	1966	559
	Delayed and interrupted	-	2	28	44	69	81	-	100	1968	68

Total N 1,643

TABLE A-I.6

FIELD OF STUDY, CHANGES IN FIELD OF STUDY, AND ENROLLMENT PATTERN

(Per Cent of Continuously Enrolled)

Most Recent Field of Study	Changes in Field of Study		N
	Field of Study Constant	Academic Discipline within Field of Study Constant	
Basic medical sciences .	55	51	179
Other biosciences	53	50	180
Total biosciences . .	54	50	359
Health fields	79	79	173
Social work	73	73	22
Psychology	58	44	470
Social sciences	62	61	92
Mathematics	70	70	192
Physical sciences	81	77	681
Total, all fields	68	63	1,989

N	1,989
Inapplicable, not continuously enrolled . . .	2,405
Total	4,394

- 2

TABLE A-I.7

GRADUATE FIELD OF STUDY, SCHOOL CHANGES, AND ENROLLMENT PATTERN[a]

(Percentage Distribution)

Graduate Field	Institutional Mobility	Enrollment Pattern		Total Per Cent	N
		Continuous	Delayed and Interrupted		
Basic medical sciences	Yes[b]	77	23	100	61
	No[c]	71	29	100	174
Other biosciences.	Yes	79	21	100	82
	No	72	28	100	157
Total biosciences . . .	Yes	78	22	100	143
	No	72	28	100	330
Health fields . .	Yes	50	50	100	40
	No	65	35	100	235
Social work . . .	Yes	27	73	100	30
	No	17	83	100	83
Psychology	Yes	61	39	100	310
	No	46	54	100	594
Social sciences .	Yes	74	26	100	31
	No	73	27	100	90
Mathematics . . .	Yes	70	30	100	99
	No	61	39	100	194
Physcial sciences.	Yes	67	33	100	251
	No	85	15	100	593
Total, all fields . . .	Yes	65	35	100	904
	No	65	35	100	2,119

N	3,023
NA	40
Inapplicable, not enrolled in 1964 . .	1,331
Total	4,394

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[a] The question about changing graduate schools was asked in 1964 of only those respondents who were currently enrolled. Therefore, only students who had enrollment patterns including 1964 (continuous and interrupted or delayed) responded to the item.

[b] Yes = Enrolled at more than one graduate school.

[c] No = Enrolled at only one graduate school.

TABLE A-I.8

GRADUATE FIELD, UNDERGRADUATE DEBTS, AND ENROLLMENT PATTERN
(Percentage Distribution)

Graduate Field	Undergraduate Debts	Enrollment Pattern				Total Per Cent	N
		Continuous	Delayed and Interrupted	Drop-out	Completed		
Basic medical sciences	None	65	22	12	2	101	221
	Any	61	30	7	2	100	54
Other biosciences.	None	53	14	29	3	99	277
	Any	42	30	20	8	100	64
Total biosciences . .	None	58	18	21	2	99	498
	Any	51	30	14	5	100	118
Health fields . .	None	40	23	31	5	99	331
	Any	41	34	21	4	100	71
Social work . . .	None	9	34	35	22	100	226
	Any	7	66	24	3	100	29
Psychology	None	36	33	29	2	100	1,004
	Any	39	42	18	1	100	249
Social sciences .	None	56	20	21	2	99	123
	Any	72	24	3	-	99	29
Mathematics . . .	None	40	22	33	5	100	406
	Any	31	23	44	1	99	77
Physical sciences.	None	60	15	23	3	101	904
	Any	58	15	26	1	100	214
Total, all fields . . .	None	45	24	27	4	100	3,492
	Any	45	30	22	2	99	787

N 4,279
NA 115
Total . 4,394

TABLE A-I.9

GRADUATE FIELD OF STUDY, GRADUATE SCHOOL DEBTS, AND ENROLLMENT PATTERN
(Percentage Distribution)

Graduate Field	Graduate School Debts	Enrollment				Total Per Cent	N
		Continuous	Delayed and Interrupted	Dropout	Completed		
Basic medical sciences	None	58	28	12	2	100	210
	Any	83	9	6	2	100	64
Other biosciences . .	None	48	17	32	3	100	258
	Any	60	18	15	7	100	80
Total biosciences .	None	52	22	23	3	100	468
	Any	70	14	11	5	100	144
Health fields	None	29	29	37	6	101	290
	Any	72	16	9	3	100	107
Social work	None	7	37	37	19	100	214
	Any	18	40	18	25	101	40
Psychology.	None	34	37	28	2	101	1,072
	Any	51	25	22	2	100	181
Social sciences . . .	None	54	22	21	3	100	112
	Any	74	18	8	-	100	39
Mathematics	None	38	22	36	5	101	435
	Any	54	21	25	-	100	48
Physical sciences . .	None	57	16	24	3	100	960
	Any	71	6	21	1	99	164
Total, all fields	None	42	26	28	4	100	3,551
	Any	62	17	17	4	100	723

N 4,274
NA 120
Total . . 4,394

TABLE A-I.10

FIELD OF GRADUATE STUDY, NUMBER OF YEARS OF STIPEND HOLDING, AND ENROLLMENT PATTERN

(Percentage Distribution)

Field of Graduate Study	Number of Years of Stipend Holding	Enrollment Pattern				Total Enrolled in 1964	Total Per Cent	N
		Continuous	Delayed or Interrupted	Dropout	Completed			
Basic medical sciences . . .	2	59	25	12	5	84	101	56
	1	33	45	22	0	78	100	51
	0	17	52	27	4	69	100	52
Other biosciences	2	38	18	37	7	56	100	73
	1	30	35	23	12	65	100	66
	0	9	26	63	2	35	100	92
Total biosciences . .	2	46	21	26	6	67	99	129
	1	32	39	22	7	71	100	117
	0	12	35	50	3	47	100	144
Social sciences .	2	*	*	*	*	*	*	25
	1	*	*	*	*	*	*	38
	0	34	34	32	0	68	100	53
Psychology . . .	2	46	26	22	5	72	99	196
	1	23	43	32	1	66	99	216
	0	28	39	31	2	67	100	750
Mathematics . . .	2	33	20	32	15	53	100	117
	1	23	39	36	1	62	99	107
	0	14	25	60	*	39	99	167
Physical sciences	2	43	12	36	9	55	100	234
	1	21	36	40	2	57	99	194
	0	20	31	48	*	51	99	232

TABLE A-I.10--Continued

Field of Graduate Study	Number of Years of Stipend Holding	Enrollment Pattern				Total Enrolled in 1964	Total Per Cent	N
		Contin-uous	Delayed or In-terrupted	Dropout	Com-pleted			
Social work . . .	2	7	29	14	50	36	100	90
	1	6	55	32	7	61	100	89
	0	6	30	61	3	36	100	72
Health fields . .	2	39	39	18	4	78	100	54
	1	23	24	45	8	47	100	136
	0	44	26	27	3	70	100	190

TABLE A-I.11

GRADUATE FIELD OF STUDY, PERCEIVED INTERFERENCES, AND ENROLLMENT PATTERN

(Percentage Distribution among Those Enrolled in 1964)

Graduate Field	Degree of Interference	Interferes with Family Life			
		Enrollment Pattern		Total Per Cent	N
		Continuous	Delayed and Interrupted		
Basic medical sciences	Greatly	*	*	*	13
	Somewhat	76	24	100	100
	Not at all	71	29	100	121
Other biosciences .	Greatly	79	21	100	24
	Somewhat	74	26	100	101
	Not at all	76	24	100	100
Total biosciences.	Greatly	81	19	100	37
	Somewhat	74	26	100	201
	Not at all	74	27	101	221
Health fields . . .	Greatly	45	54	99	55
	Somewhat	66	34	100	111
	Not at all	72	28	100	104
Social work	Greatly	*	*	*	2
	Somewhat	25	75	100	48
	Not at all	11	89	100	65
Psychology	Greatly	58	42	100	84
	Somewhat	54	46	100	433
	Not at all	47	53	100	371
Social sciences . .	Greatly	*	*	*	5
	Somewhat	77	23	100	48
	Not at all	69	31	100	67
Mathematics	Greatly	59	41	100	32
	Somewhat	63	37	100	134
	Not at all	68	32	100	114
Physical sciences .	Greatly	87	13	100	85
	Somewhat	79	21	100	366
	Not at all	79	21	100	363

N	2,946
NA	117
Inapplicable	1,331
Total	4,394

TABLE A-I.11--Continued

Graduate Field	Degree of Interference	Interferes with Job			
		Enrollment Pattern		Total Per Cent	N
		Con-tinuous	Delayed and Interrupted		
Basic medical sciences	Greatly	*	*	*	6
	Somewhat	*	*	*	15
	Not at all	70	30	100	190
Other biosciences .	Greatly	*	*	*	15
	Somewhat	63	37	100	27
	Not at all	80	20	100	149
Total biosciences.	Greatly	57	43	100	21
	Somewhat	69	31	100	42
	Not at all	74	26	100	339
Health fields . . .	Greatly	44	56	100	25
	Somewhat	52	48	100	60
	Not at all	71	29	100	170
Social work	Greatly	*	*	*	5
	Somewhat	*	*	*	19
	Not at all	14	86	100	84
Psychology	Greatly	33	67	100	87
	Somewhat	55	45	100	273
	Not at all	53	47	100	473
Social sciences . .	Greatly	*	*	*	8
	Somewhat	*	*	*	19
	Not at all	72	28	100	76
Mathematics	Greatly	*	*	*	18
	Somewhat	67	33	100	61
	Not at all	63	37	100	195
Physical sciences .	Greatly	77	23	100	39
	Somewhat	67	33	100	130
	Not at all	80	20	100	545

N 2,689
NA 374
Inapplicable . 1,331
Total . . . 4,394

TABLE A-I.11--Continued

Graduate Field	Degree of Interference	Interferes with Social Life			
		Enrollment Pattern		Total Per Cent	N
		Continuous	Delayed and Interrupted		
Basic medical sciences	Greatly	68	32	100	41
	Somewhat	81	19	100	95
	Not at all	70	30	100	103
Other biosciences .	Greatly	80	20	100	25
	Somewhat	72	28	100	142
	Not at all	83	17	100	66
Total biosciences.	Greatly	73	27	100	66
	Somewhat	76	24	100	237
	Not at all	75	25	100	169
Health fields . . .	Greatly	51	49	100	39
	Somewhat	63	37	100	158
	Not at all	74	26	100	73
Social work	Greatly	*	*	*	9
	Somewhat	16	84	100	70
	Not at all	11	89	100	37
Psychology	Greatly	57	43	100	67
	Somewhat	51	49	100	448
	Not at all	52	48	100	376
Social sciences . .	Greatly	*	*	*	12
	Somewhat	77	23	100	62
	Not at all	68	32	100	50
Mathematics	Greatly	53	47	100	30
	Somewhat	70	30	100	162
	Not at all	58	42	100	93
Physical sciences .	Greatly	82	18	100	129
	Somewhat	80	20	100	431
	Not at all	80	20	100	270

N	2,988
NA	75
Inapplicable . .	1,331
Total	4,394

APPENDIX II

TABLE A-II.1

ANTICIPATED FIELD OF GRADUATE STUDY AND ENROLLMENT IN GRADUATE SCHOOL AMONG THOSE ANTICIPATING A SELECTED SCIENCE FIELD OF GRADUATE STUDY AS SENIORS

(Percentage Distribution)

Graduate Field	Ever Enrolled	Never Enrolled	Total Per Cent	N
Basic medical sciences. . . .	74	26	100	321
Other biosciences	68	32	100	572
Total biosciences	70	30	100	893
Health fields	52	48	100	740
Social work	49	51	100	481
Psychology.	62	38	100	1,671
Social sciences	63	37	100	329
Mathematics	62	38	100	633
Physical sciences	76	24	100	1,399
Total, all fields	63	37	100	6,146

TABLE A-II.2

ANTICIPATED AND ACTUAL FIELD OF GRADUATE STUDY AMONG STUDENTS WITH A SELECTED SCIENCE FIELD AT EITHER TIME

(Per Cent of Those in Each Anticipated Field Who Ever Enrolled for an Advanced Degree in Each Graduate Field)

Anticipated Field of Graduate Study	Actual Field of Graduate Study									Total Per Cent	N	Per Cent Never Enrolled for an Advanced Degree	N
	Basic Medical Sciences	Other Biosciences	Social Sciences	Psychology	Mathematics	Physical Sciences	Social Work	Health Fields	Non-scientific Fields				
Basic medical sciences	53	16	*	4	-	5	-	1	21	99	238	26	321
Other biosciences . .	5	61	2	2	*	5	1	3	21	100	388	32	572
Total biosciences .	23	44	1	3	*	5	1	2	21	100	388	30	893
Health fields	*	*	-	4	-	-	*	74	21	99	383	48	740
Social work	-	-	3	4	*	-	65	-	28	100	237	51	481
Psychology	*	1	1	53	*	2	1	*	42	100	1,040	38	1,671
Social sciences . . .	-	-	42	7	*	3	8	-	39	99	207	37	329
Mathematics	-	-	-	1	74	5	-	-	20	100	394	38	633
Physical sciences . .	2	*	-	*	3	81	*	-	14	100	1,058	24	1,399

N 3,945
Never enrolled . . . 2,201
Total . . . 6,146

TABLE A-II.3

ANTICIPATED GRADUATE FIELD OF STUDY, SEX, SENIOR PLANS AND ENROLLMENT

(Per Cent Ever Enrolled)

Anticipated Field of Graduate Study	Sex	Senior Plans		Total
		Definite	Tentative	
Basic medical sciences. .	Male	89 (132)	* (32)	88 (164)
	Female	71 (94)	60 (40)	68 (134)
Other biosciences	Male	77 (226)	65 (114)	73 (340)
	Female	63 (121)	56 (64)	60 (185)
Total biosciences . . .	Male	82 (358)	69 (146)	78 (504)
	Female	66 (215)	58 (104)	64 (319)
Health fields	Male	85 (184)	43 (56)	75 (240)
	Female	54 (242)	30 (169)	44 (411)
Social work	Male	53 (73)	* (29)	60 (102)
	Female	52 (210)	42 (99)	49 (309)
Psychology	Male	73 (474)	60 (254)	68 (728)
	Female	64 (466)	55 (318)	60 (784)
Social sciences	Male	80 (105)	66 (68)	75 (173)
	Female	61 (184)	34 (47)	51 (131)
Mathematics	Male	71 (289)	58 (136)	62 (425)
	Female	55 (96)	58 (66)	56 (162)
Physical sciences	Male	83 (891)	62 (245)	78 (1,136)
	Female	77 (112)	49 (69)	66 (181)

N	5,605
NA, no plans	541
Total	6,146

TABLE A-II.4

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, FAMILY ROLE 1964, SENIOR PLANS FOR GRADUATE SCHOOL, AND ENROLLMENT 1961-1964

(Per Cent Ever Enrolled)

Anticipated Field of Study	Senior Plans	Sex and Family Role 1964					
		Male			Female		
		Single	Married	Father	Single	Married	Mother
Basic medical sciences . . .	Definite	92 (76)	* (23)	* (28)	81 (52)	* (17)	* (15)
	Tentative	* (8)	* (9)	* (14)	* (16)	* (11)	* (13)
	Total	93 (84)	* (32)	69 (42)	71 (68)	* (28)	* (28)
Other bio-sciences . . .	Definite	90 (98)	* (35)	59 (87)	92 (51)	* (27)	* (34)
	Tentative	* (39)	* (17)	59 (51)	* (30)	* (30)	* (27)
	Total	84 (137)	90 (52)	59 (138)	90 (81)	* (30)	34 (61)
Total bio-sciences . .	Definite	91 (174)	91 (58)	62 (115)	86 (103)	50 (44)	45 (49)
	Tentative	74 (47)	* (26)	60 (65)	70 (46)	* (14)	45 (40)
	Total	87 (221)	93 (84)	61 (180)	81 (144)	53 (58)	45 (89)
Health fields .	Definite	82 (71)	94 (62)	76 (41)	55 (128)	62 (61)	40 (45)
	Tentative	* (21)	* (7)	* (27)	43 (65)	* (34)	14 (58)
	Total	73 (92)	94 (69)	57 (68)	51 (193)	52 (95)	25 (103)
Social work . .	Definite	* (20)	* (22)	* (30)	59 (100)	60 (53)	27 (48)
	Tentative	* (16)	* (5)	* (8)	* (20)	* (38)	* (33)
	Total	* (36)	* (27)	* (38)	59 (120)	58 (91)	20 (81)

TABLE A-II.4--Continued

Anticipated Field of Study	Senior Plans	Sex and Family Role 1964					
		Male			Female		
		Single	Married	Father	Single	Married	Mother
Psychology . . .	Definite	72 (156)	88 (90)	67 (210)	74 (199)	76 (103)	39 (145)
	Tentative	60 (74)	* (31)	58 (134)	58 (87)	60 (75)	48 (120)
	Total	68 (230)	86 (121)	63 (344)	69 (286)	64 (178)	43 (265)
Social sciences.	Definite	82 (50)	* (15)	* (37)	* (33)	* (23)	* (26)
	Tentative	* (32)	* (9)	* (23)	* (11)	* (12)	* (22)
	Total	73 (82)	* (24)	78 (60)	84 (44)	* (35)	29 (48)
Mathematics . .	Definite	78 (93)	75 (63)	63 (126)	65 (43)	* (28)	* (25)
	Tentative	57 (49)	* (19)	56 (64)	* (29)	* (18)	* (13)
	Total	71 (142)	72 (82)	60 (190)	64 (72)	65 (46)	* (38)
Physical sciences . . .	Definite	84 (375)	89 (194)	76 (293)	* (33)	* (32)	* (35)
	Tentative	61 (57)	82 (54)	57 (110)	* (26)	* (14)	* (26)
	Total	81 (432)	87 (248)	71 (403)	73 (59)	80 (46)	51 (61)

N	5,330
NA, family role	191
NA, no plans	541
Widow, divorced, separated .	84
Total	6,146

TABLE A-II.5

ANTICIPATED GRADUATE FIELD, ACADEMIC PERFORMANCE, SENIOR PLANS AND ENROLLMENT

(Per Cent Ever Enrolled)

Anticipated Graduate Field	API	Senior Plans		Total
		Definite	Tentative	
Basic medical sciences. .	High	84 (71)	* (16)	83 (87)
	Medium	87 (82)	* (28)	80 (110)
	Low	70 (66)	* (28)	72 (94)
Other biosciences	High	78 (72)	* (22)	70 (94)
	Medium	76 (127)	67 (73)	72 (200)
	Low	69 (140)	61 (83)	66 (223)
Total biosciences . . .	High	81 (143)	* (38)	76 (181)
	Medium	80 (209)	65 (101)	75 (310)
	Low	69 (206)	66 (111)	68 (317)
Health fields	High	44 (70)	* (28)	39 (98)
	Medium	70 (203)	34 (108)	58 (311)
	Low	73 (141)	33 (86)	58 (227)
Social work	High	48 (52)	* (17)	54 (69)
	Medium	62 (112)	59 (64)	61 (176)
	Low	46 (110)	28 (46)	40 (156)
Psychology	High	81 (223)	58 (65)	76 (288)
	Medium	75 (311)	55 (233)	66 (544)
	Low	56 (400)	59 (272)	57 (672)

TABLE A-II.5--Continued

Anticipated Graduate Field	API	Senior Plans		Total
		Definite	Tentative	
Social sciences	High	90 (48)	* (13)	85 (61)
	Medium	60 (78)	* (39)	65 (117)
	Low	71 (63)	30 (57)	52 (120)
Mathematics	High	85 (154)	47 (34)	78 (188)
	Medium	66 (118)	76 (109)	71 (227)
	Low	44 (113)	31 (55)	40 (168)
Physical sciences	High	92 (426)	* (34)	91 (460)
	Medium	81 (355)	71 (135)	78 (490)
	Low	64 (210)	46 (143)	57 (353)

N	5,533
NA, API	72
NA, no plans	541
Total	6,146

TABLE A-II.6

ANTICIPATED FIELD OF GRADUATE STUDY, UNDERGRADUATE DEBTS, SENIOR PLANS AND ENROLLMENT

(Per Cent Ever Enrolled)

Anticipated Field of Graduate Study	Debts	Senior Plans		Total
		Definite	Tentative	
Basic medical sciences. .	None	81 (177)	71 (58)	78 (235)
	Any	82 (45)	* (10)	84 (55)
Other biosciences	None	75 (245)	61 (132)	70 (377)
	Any	63 (90)	64 (45)	64 (135)
Total biosciences . . .	None	77 (422)	64 (190)	73 (612)
	Any	70 (135)	69 (55)	70 (190)
Health fields	None	62 (356)	34 (206)	52 (562)
	Any	93 (56)	* (11)	84 (67)
Social work	None	52 (234)	50 (109)	51 (343)
	Any	56 (45)	* (13)	59 (58)
Psychology	None	69 (769)	54 (468)	63 (1,237)
	Any	66 (164)	77 (95)	70 (259)
Social sciences	None	74 (167)	51 (85)	66 (252)
	Any	* (18)	* (20)	* (38)
Mathematics	None	69 (298)	56 (167)	65 (465)
	Any	61 (79)	* (25)	64 (104)
Physical sciences	None	83 (800)	60 (222)	78 (1,022)
	Any	78 (184)	49 (75)	70 (259)

N	5,468
NA, debts	137
NA, no plans	541
Total	6,146

TABLE A-II.7

ANTICIPATED FIELD OF GRADUATE STUDY, ANTICIPATED CAREER EMPLOYER, SENIOR PLANS AND ENROLLMENT

(Per Cent Ever Enrolled)

Anticipated Field of Graduate Study	Senior Plans	Anticipated Career Employer								
		Self-employed	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	Federal Government	School
Basic medical sciences.	Definite	* (6)	92 (47)	91 (150)	86 (52)	- (0)	- (0)	* (31)	89 (53)	* (12)
	Tentative	* (9)	* (22)	* (31)	* (11)	- (0)	- (0)	* (11)	* (8)	* (6)
	Total	* (15)	81 (69)	90 (181)	86 (63)	- (0)	- (0)	68 (50)	88 (61)	* (18)
Other biosciences . . .	Definite	* (16)	78 (50)	93 (166)	91 (79)	* (17)	* (3)	* (17)	77 (88)	52 (77)
	Tentative	* (19)	* (14)	68 (50)	* (12)	* (2)	* (2)	* (14)	* (27)	73 (64)
	Total	* (35)	73 (64)	87 (216)	82 (91)	* (19)	* (5)	* (31)	73 (115)	62 (141)
Total biosciences . .	Definite	* (22)	84 (97)	92 (316)	89 (131)	* (17)	* (3)	65 (48)	82 (141)	54 (89)
	Tentative	* (28)	* (36)	75 (81)	* (23)	* (2)	* (2)	* (33)	* (35)	76 (70)
	Total	32 (50)	77 (133)	88 (397)	84 (154)	* (19)	* (5)	72 (81)	78 (176)	64 (159)
Health fields	Definite	* (37)	* (22)	69 (75)	* (12)	* (19)	* (16)	56 (168)	* (31)	72 (40)
	Tentative	* (16)	* (12)	* (30)	* (8)	* (15)	* (6)	29 (114)	* (13)	* (26)
	Total	72 (53)	* (34)	62 (105)	* (20)	* (34)	* (22)	45 (282)	46 (44)	58 (66)
Social work	Definite	* (9)	* (7)	98 (42)	* (30)	36 (84)	52 (110)	70 (74)	* (21)	56 (63)
	Tentative	- (0)	* (7)	* (9)	* (9)	44 (55)	50 (60)	82 (40)	* (16)	* (20)
	Total	* (9)	* (14)	96 (50)	* (39)	37 (139)	51 (170)	75 (114)	* (37)	59 (83)

TABLE A-II.7--Continued

Anticipated Field of Graduate Study	Senior Plans	Anticipated Career Employer: Self-employed	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	Federal Government	School
Psychology	Definite	49 (41)	47 (122)	85 (279)	93 (70)	77 (62)	85 (52)	84 (132)	64 (99)	67 (432)
	Tentative	* (28)	48 (98)	89 (89)	* (28)	* (37)	* (21)	77 (44)	64 (63)	65 (246)
	Total	49 (69)	47 (220)	86 (368)	89 (98)	65 (99)	71 (73)	82 (176)	64 (162)	67 (678)
Social sciences	Definite	* (12)	* (29)	85 (66)	* (13)	* (19)	* (13)	* (9)	* (17)	* (34)
	Tentative	* (10)	* (8)	80 (41)	* (10)	* (23)	* (21)	* (4)	* (20)	* (23)
	Total	* (22)	* (37)	83 (107)	* (23)	57 (42)	* (34)	* (13)	* (37)	56 (57)
Mathematics	Definite	* (17)	59 (152)	95 (148)	96 (49)	- (0)	- (0)	* (2)	70 (61)	54 (50)
	Tentative	* (12)	54 (100)	* (36)	* (34)	- (0)	- (0)	* (6)	61 (62)	* (28)
	Total	* (29)	57 (252)	89 (184)	78 (83)	- (0)	- (0)	* (8)	66 (123)	63 (78)
Physical sciences . . .	Definite	* (31)	81 (488)	94 (519)	95 (209)	* (8)	* (2)	* (15)	76 (226)	73 (84)
	Tentative	* (23)	60 (144)	86 (59)	* (37)	* (18)	* (2)	* (7)	51 (64)	57 (63)
	Total	57 (54)	76 (632)	93 (578)	93 (246)	* (26)	* (4)	* (22)	70 (295)	66 (147)

N	5,493
NA.	112
NA, no plans	541
Total	6,146

TABLE A-II.8

ANTICIPATED FIELD OF GRADUATE STUDY, ANTICIPATED CAREER ACTIVITIES, SENIOR PLANS AND ENROLLMENT

(Per Cent Ever Enrolled)

Anticipated Field of Study	Senior Plans	Career Activities						
		Teaching	Research	Administration	Service	Supervision	Consultation	None
Basic medical sciences	Definite	90 (140)	87 (179)	84 (44)	63 (46)	88 (51)	* (39)	- (0)
	Tentative	* (27)	* (35)	* (17)	* (23)	* (18)	* (18)	* (3)
	Total	91 (167)	86 (214)	79 (61)	68 (69)	86 (69)	90 (57)	* (3)
Other biosciences.	Definite	76 (233)	81 (201)	71 (59)	77 (47)	69 (85)	73 (55)	* (6)
	Tentative	66 (114)	61 (62)	* (36)	66 (47)	* (32)	* (34)	* (1)
	Total	73 (347)	76 (263)	64 (95)	71 (94)	63 (117)	62 (89)	* (7)
Total biosciences . . .	Definite	82 (373)	84 (380)	77 (103)	70 (93)	76 (136)	81 (94)	* (6)
	Tentative	72 (141)	69 (97)	57 (53)	70 (70)	58 (50)	58 (52)	* (4)
	Total	79 (514)	81 (477)	70 (156)	70 (163)	72 (186)	73 (146)	* (10)
Health fields . .	Definite	65 (144)	82 (80)	58 (101)	72 (313)	56 (147)	71 (100)	* (2)
	Tentative	34 (118)	* (35)	34 (59)	34 (143)	28 (99)	* (38)	- (0)
	Total	53 (312)	70 (115)	49 (160)	60 (456)	45 (246)	91 (138)	* (2)
Social work . . .	Definite	73 (104)	75 (60)	64 (55)	59 (165)	76 (81)	65 (111)	* (5)
	Tentative	* (26)	* (15)	* (18)	56 (93)	77 (43)	61 (51)	* (2)
	Total	72 (130)	72 (75)	64 (73)	58 (258)	77 (124)	64 (162)	* (7)
Psychology	Definite	74 (609)	87 (288)	66 (254)	75 (325)	60 (253)	68 (348)	* (5)
	Tentative	64 (331)	70 (132)	64 (179)	57 (154)	56 (192)	66 (202)	* (3)
	Total	71 (940)	82 (420)	65 (438)	70 (479)	58 (445)	68 (550)	* (8)

TABLE A-II.8--Continued

Anticipated Field of Study	Senior Plans	Career Activities						
		Teaching	Research	Adminis-tration	Service	Super-vision	Consul-tation	None
Social sciences .	Definite	76 (102)	92 (83)	70 (50)	86 (49)	60 (43)	87 (55)	* (2)
	Tentative	56 (79)	72 (54)	* (38)	* (35)	* (36)	* (38)	* (2)
	Total	67 (181)	84 (137)	61 (88)	68 (84)	42 (79)	60 (93)	* (4)
Mathematics . . .	Definite	82 (220)	83 (196)	49 (86)	* (30)	50 (86)	55 (122)	* (12)
	Tentative	79 (62)	57 (40)	50 (56)	* (19)	49 (75)	* (35)	* (6)
	Total	81 (262)	75 (286)	49 (142)	45 (49)	50 (161)	50 (157)	* (18)
Physical sciences	Definite	91 (565)	88 (737)	74 (266)	78 (41)	78 (268)	88 (201)	* (5)
	Tentative	67 (118)	64 (179)	48 (42)	* (21)	55 (116)	76 (80)	- (0)
	Total	86 (683)	84 (916)	68 (358)	69 (62)	71 (384)	85 (281)	* (5)

N	5,185
NA	366
None	54
NA, no plans . . .	541
Total	6,146

APPENDIX III

TABLE A-III.1

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND CURRENT EMPLOYMENT AMONG PEOPLE NEVER ENROLLED IN GRADUATE STUDY

(Per Cent Employed, 1964)

Anticipated Field of Graduate Study	Sex	
	Male	Female
Basic medical sciences	100 (24)	78 (59)
Other biosciences	99 (96)	65 (88)
Total biosciences	99 (120)	70 (147)
Health fields	92 (79)	74 (278)
Social work	94 (47)	64 (197)
Psychology	99 (246)	63 (385)
Social sciences	98 (46)	53 (76)
Mathematics	96 (159)	58 (80)
Physical sciences	98 (273)	56 (68)
Total, all fields	98 (970)	65 (1,231)

N	2,201
Ever enrolled . .	3,945
Total	6,146

TABLE A-III.2A

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND FIELD OF 1964 EMPLOYMENT

(Percentage Distribution)

Anticipated Field of Graduate Study	Sex	Field of 1964 Employment										Total Per Cent	N
		Basic Medical Sciences	Other Biosciences	Health Professions	Social Work	Psychology	Social Sciences	Mathematics	Physical Sciences	Education	Other		
Basic medical sciences	Male	*	*	*	*	*	*	*	*	*	*	*	19
	Female	48	2	15	-	-	-	-	15	15	4	99	46
Other biosciences .	Male	1	5	7	-	-	-	-	-	36	51	99	81
	Female	27	6	12	-	-	-	-	-	52	4	100	56
Health fields . . .	Male	-	-	52	-	5	-	-	2	-	41	100	59
	Female	*	-	95	*	-	-	-	-	3	2	100	184
Social work	Male	-	-	-	69	7	-	-	-	2	21	99	42
	Female	-	-	2	41	-	-	-	-	31	25	99	126
Psychology	Male	-	-	1	8	1	-	-	1	13	77	101	192
	Female	-	-	2	9	1	-	2	-	62	25	101	242
Social sciences . .	Male	*	*	*	*	*	*	*	*	*	*	*	36
	Female	-	2	-	8	2	-	-	-	48	40	100	40
Mathematics	Male	-	-	-	-	-	-	18	5	3	74	100	115
	Female	-	-	-	-	-	-	42	2	36	20	100	45
Physical sciences .	Male	3	-	-	1	-	-	1	35	13	47	100	228
	Female	*	*	*	*	*	*	*	*	*	*	*	38

N	1,549
Inapplicable . .	628
NA	24
Total	2,201

TABLE A-III.2B

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND 1964 EMPLOYMENT FIELD (Selected Summary Percentages)[a]

Anticipated Field of Graduate Study	1964 Employment Field					
	Male			Female		
	Same as or Related to Study Field[b]	Education	Other	Same as or Related to Study Field	Education	Other
Total biosciences .	5 (100)	29 (100)	41 (100)	40 (102)	30 (102)	2 (102)
Basic medical sciences . . .	* (19)	* (19)	* (19)	5 (46)	* (46)	- (46)
Other biosciences	6 (81)	36 (81)	51 (81)	32 (56)	52 (56)	2 (56)
Health fields . . .	52 (59)	- (59)	41 (59)	94 (184)	3 (184)	2 (184)
Social work	76 (42)	2 (42)	21 (42)	41 (126)	31 (126)	25 (126)
Psychology	9 (192)	13 (192)	76 (192)	10 (242)	62 (242)	25 (242)
Social sciences . .	* (36)	* (36)	* (36)	- (40)	48 (40)	40 (40)
Mathematics	23 (115)	3 (115)	74 (115)	44 (45)	35 (45)	20 (45)
Physical sciences .	36 (228)	13 (228)	47 (228)	* (38)	* (38)	* (38)

[a] Taken from Table A-III.2A.

[b] The fields which are grouped as the same or related are:

1. Basic medical and Other biosciences,
2. Social work and Psychology,
3. Mathematics and Physical sciences.

TABLE A-III.3

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND 1964 EMPLOYER[a] OF NON-STUDENTS

(Percentage Distribution)

Anticipated Field of Graduate Study	Sex	Current Employer									Total Per Cent	N
		Self-employed	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government		
Basic medical sciences . . .	Male	*	*	*	*	*	*	*	*	*	*	24
	Female	-	37	17	-	-	-	11	15	17	97	46
Other biosciences	Male	11	10	3	1	-	-	6	18	27	76	94
	Female	-	12	4	2	11	-	21	51	2	103	57
Total biosciences	Male	13	13	2	1	-	-	8	17	22	76	118
	Female	-	23	10	1	6	-	16	35	9	100	103
Health fields	Male	7	19	1	-	1	-	23	-	9	60	69
	Female	-	6	8	4	7	2	59	4	6	96	206
Social work	Male	-	7	-	-	30	7	-	2	14	60	44
	Female	-	14	-	-	29	8	2	23	5	81	126
Psychology	Male	*	30	4	3	4	-	2	10	15	68	241
	Female	2	18	4	1	8	2	2	60	5	102	243
Social sciences	Male	2	27	-	2	13	-	-	9	4	57	45
	Female	-	22	5	-	2	-	2	55	5	91	40

TABLE A-III.3--Continued

Anticipated Field of Graduate Study	Sex	Current Employer									Total Per Cent	N
		Self-employed	Private Company	College or University	Research Institute	Public Welfare	Private Welfare	Hospital	School System	Federal Government		
Mathematics	Male	1	56	-	1	-	-	-	1	11	70	149
	Female	2	33	-	15	-	-	-	35	20	105	46
Physical sciences	Male	1	40	1	1	*	1	-	7	28	79	269
	Female	*	*	*	*	*	*	*	*	*	*	38
Total, all fields	Male	3	33	2	1	3	*	3	8	18	71	935
	Female	1	16	6	3	10	2	18	33	7	98	802

N	1,737
NA	13
Not employed . . .	451
Ever enrolled . . .	3,905
Total	6,146

Not shown: professional office, professional partnership, state government, local government, church, other.

[a] Multiple responses were possible.

TABLE A-III.4

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND ACADEMIC TRAINING FOR PRESENT JOB AMONG THOSE WHO NEVER ENROLLED IN GRADUATE SCHOOL

(Per Cent Very Well Prepared)

Anticipated Field of Graduate Study	Sex	
	Male	Female
Basic medical sciences	* (18)	33 (46)
Other biosciences	28 (82)	32 (56)
Total biosciences	34 (100)	32 (102)
Health fields	45 (60)	56 (196)
Social work	45 (42)	39 (124)
Psychology	26 (187)	45 (239)
Social sciences	26 (35)	28 (40)
Mathematics	24 (119)	56 (46)
Physical sciences	37 (227)	60 (38)
Total, all fields	32 (770)	46 (785)

N	1,555
NA, inapplicable . .	646
Ever enrolled	3,945
Total	6,146

TABLE A-III.5

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND JOB SATISFACTION AMONG THOSE WHO NEVER ENROLLED IN GRADUATE SCHOOL

(Percentage Distribution)

Anticipated Field of Graduate Study	Sex	Job Satisfaction: Extremely Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Extremely Dissatisfied	Total Per Cent	N
Basic medical sciences	Male	*	*	*	*	*	*	19
	Female	28	50	11	9	2	100	46
Other biosciences . .	Male	39	34	4	23	-	100	82
	Female	38	52	-	9	2	101	56
Total biosciences .	Male	36	40	4	21	-	101	101
	Female	33	51	5	9	2	100	102
Health fields	Male	53	40	5	2	-	99	58
	Female	37	46	4	10	3	100	195
Social work	Male	40	52	2	2	2	98	42
	Female	56	35	6	3	-	100	124
Psychology	Male	43	48	3	5	1	100	196
	Female	40	42	6	6	6	100	239
Social sciences . . .	Male	34	48	10	7	-	99	29
	Female	40	48	2	2	8	100	40
Mathematics	Male	55	32	6	7	1	101	119
	Female	28	63	4	4	-	99	46
Physical sciences . .	Male	34	53	4	6	3	100	226
	Female	18	45	13	24	-	100	38
Total, all fields.	Male	42	45	4	7	1	99	771
	Female	39	45	5	8	3	100	784

N	1,555
NA, inapplicable . .	646
Ever enrolled	3,945
Total	6,146

TABLE A-III.6

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND PREFERENCE FOR GRADUATE SCHOOL IN 1965 AMONG THOSE WHO NEVER ATTENDED GRADUATE SCHOOL

(Per Cent "Prefer To Go")[a]

Anticipated Field of Graduate Study	Sex	
	Male	Female
Basic medical sciences	82 (22)	48 (50)
Other biosciences	58 (79)	54 (87)
Total biosciences	63 (101)	52 (137)
Health fields	63 (67)	39 (252)
Social work	75 (36)	41 (182)
Psychology	78 (223)	47 (345)
Social sciences	57 (44)	52 (65)
Mathematics	67 (156)	44 (78)
Physical sciences	69 (261)	67 (67)
Total, all fields	70 (888)	46 (1,126)

N	2,014
NA	187
Ever enrolled . . .	3,945
Total	6,146

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[a] If it were entirely up to you, would you go to school next year or not? (CIRCLE ONE)

I would prefer to go to school . . . 1

I would prefer not to go to school . 2

TABLE A-III.7

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, AND PLANS FOR FUTURE GRADUATE STUDY AMONG THOSE WHO NEVER ENROLLED IN GRADUATE SCHOOL

(Percentage Distribution)

Anticipated Field of Graduate Study	Sex	Plans for Future Graduate Study				Total Per Cent	N
		Not Planning To Enroll	Probably Not Planning To Enroll	Probably Planning To Enroll	Planning To Enroll		
Basic medical sciences .	Male	*	*	*	*	*	17
	Female	26	17	41	15	99	46
Other biosciences . . .	Male	16	18	37	29	100	73
	Female	21	24	29	26	100	80
Total biosciences . .	Male	18	17	37	29	101	90
	Female	23	21	33	22	99	126
Health fields	Male	31	36	15	17	99	58
	Female	21	37	39	4	101	238
Social work	Male	25	4	25	46	100	24
	Female	16	28	39	16	99	158
Psychology	Male	17	15	34	34	100	151
	Female	23	25	38	14	100	307
Social sciences	Male	14	17	19	50	100	36
	Female	4	40	40	16	100	55
Mathematics	Male	5	15	52	28	100	109
	Female	24	25	30	21	100	71
Physical sciences . . .	Male	18	11	34	38	101	182
	Female	14	29	29	28	100	58
Total, all fields .	Male	16	16	34	33	99	650
	Female	20	29	37	14	100	1,013

N	1,663
NA, not applicable	538
Ever enrolled	3,945
Total	6,146

TABLE A-III.8

ANTICIPATED FIELD OF GRADUATE STUDY, SEX, JOB SATISFACTION, AND EXPECTATION OF FUTURE ENROLLMENT AMONG THOSE NOT ENROLLED 1961-1964

(Per Cent Planning Plus Per Cent Probably Planning To Enroll)

Anticipated Field of Graduate Study	Sex	Job Satisfaction: Satisfied	Job Satisfaction: Neutral and Dissatisfied
Total biosciences . . .	Male	53 (60)	* (15)
	Female	51 (73)	* (15)
Basic medical sciences	Male	* (11)	* (1)
	Female	* (25)	* (10)
Other biosciences . .	Male	55 (49)	* (14)
	Female	56 (48)	* (5)
Health professions . . .	Male	32 (44)	* (1)
	Female	48 (130)	* (32)
Social work	Male	* (17)	* (3)
	Female	58 (82)	* (9)
Psychology	Male	63 (117)	* (10)
	Female	46 (148)	* (30)
Social sciences	Male	* (17)	* (5)
	Female	* (26)	* (1)
Mathematics	Male	77 (73)	* (8)
	Female	* (35)	* (4)
Physical sciences . . .	Male	68 (136)	* (16)
	Female	* (22)	* (13)

N	1,142
NA	1,059
Ever enrolled . . .	3,945
Total	6,146

APPENDIX IV

TABLE A-IV.1

GRADUATE FIELD, SEX, AND CAREER FIELD

(Per Cent with Same Graduate and Career Field)

Graduate Field	Sex	Career Field	N
Basic medical sciences	Male	65	187
	Female	62	93
Other biosciences	Male	60	265
	Female	49	90
Total biosciences	Male	62	452
	Female	56	183
Health fields	Male	85	234
	Female	86	184
Social work	Male	74	102
	Female	87	156
Psychology	Male	58	670
	Female	49	608
Social sciences	Male	61	90
	Female	66	65
Mathematics	Male	54	382
	Female	40	114
Physical sciences	Male	74	997
	Female	49	157

Total N 4,394

TABLE A-IV.2

GRADUATE FIELD, SEX, ENROLLMENT PATTERN, AND CAREER FIELD

(Per Cent with Same Graduate and Career Field)

Graduate Field	Sex	Enrollment Pattern				Total
		Continuous	Delayed and Interrupted	Dropout	Completed	
Basic medical sciences	Male	69 (137)	60 (30)	* (17)	* (3)	65 (187)
	Female	52 (42)	79 (34)	* (15)	* (2)	62 (93)
Other biosciences.	Male	72 (142)	52 (44)	39 (69)	* (10)	60 (265)
	Female	53 (38)	* (16)	36 (31)	* (5)	49 (90)
Total biosciences . . .	Male	70 (279)	55 (74)	40 (86)	54 (13)	62 (452)
	Female	52 (80)	74 (50)	37 (46)	* (7)	56 (183)
Health fields . .	Male	90 (158)	75 (44)	64 (25)	* (7)	85 (234)
	Female	* (15)	81 (59)	92 (98)	* (12)	86 (184)
Social work . . .	Male	* (11)	78 (45)	58 (36)	* (10)	74 (102)
	Female	* (11)	98 (52)	74 (50)	91 (43)	87 (156)
Psychology	Male	66 (302)	60 (207)	41 (151)	* (10)	58 (670)
	Female	62 (168)	55 (233)	29 (192)	* (15)	49 (608)
Social sciences .	Male	77 (56)	* (17)	* (16)	- (1)	61 (90)
	Female	81 (36)	* (15)	* (12)	* (2)	66 (65)
Mathematics . . .	Male	70 (174)	42 (85)	40 (117)	* (6)	54 (382)
	Female	* (18)	41 (22)	33 (60)	- (14)	40 (114)
Physical sciences.	Male	84 (628)	58 (144)	55 (204)	86 (21)	74 (997)
	Female	66 (53)	26 (27)	42 (71)	* (6)	49 (157)

Total N . . 4,394

TABLE A-IV.3

GRADUATE FIELD, SEX, AND CAREER EMPLOYER

(Percentage Distribution)

Graduate Field	Sex	Anticipated Employer										Total Per Cent	N
		Private Company	College or University	Research Institute	Hospital	School System	Public Welfare	Private Welfare	Federal Government	State Government	Local Government		
Basic medical sciences .	Male	19	70	25	9	4	*	-	19	3	-	149	187
	Female	14	68	39	23	3	-	-	38	18	-	203	92
Other biosciences . . .	Male	11	56	20	5	13	6	1	31	15	2	160	265
	Female	11	60	27	8	31	1	1	10	2	-	151	90
Total biosciences . .	Male	14	62	22	7	9	4	1	28	10	1	158	452
	Female	13	64	33	15	17	1	1	25	10	-	179	182
Health fields	Male	10	11	2	17	2	*	*	10	3	3	58	228
	Female	23	44	15	13	22	6	6	4	6	6	144	182
Social work	Male	6	13	3	36	10	56	53	12	28	10	227	102
	Female	-	7	7	41	10	37	54	8	12	11	189	155
Psychology	Male	14	44	9	14	36	6	4	13	10	2	152	668
	Female	5	27	7	20	60	8	8	5	6	3	149	604
Social sciences	Male	10	69	14	7	7	8	7	28	11	6	161	90
	Female	9	58	37	3	14	18	15	15	8	5	182	65
Mathematics	Male	46	48	16	1	7	-	-	18	2	1	139	379
	Female	32	27	12	-	30	-	-	17	1	5	124	114
Physical sciences . . .	Male	49	55	22	1	9	*	*	23	1	*	160	993
	Female	41	50	17	8	34	1	-	8	4	1	164	157

N 4,371
NA 23
Total . 4,394

TABLE A-IV.4

GRADUATE FIELD, SEX, ENROLLMENT PATTERN, AND ANTICIPATED CAREER EMPLOYER

(Percentage Distribution)

Men								
Graduate Field	Enrollment Pattern	Career Employer					Total Per Cent	N
		Private Company	College or University	Research Institute	Hospital	School System		
Basic medical sciences	Continuous	17	79	23	7	5	131	137
	Delayed and interrupted	17	53	27	3	3	103	30
	Dropout	*	*	*	*	*	*	17
	Done	*	*	*	*	*	*	3
Other biosciences .	Continuous	13	71	22	3	4	113	142
	Delayed and interrupted	7	50	20	18	30	125	44
	Dropout	12	33	13	1	17	76	69
	Done	*	*	*	*	*	*	10
Total biosciences	Continuous	15	72	23	5	8	120	279
	Delayed and interrupted	11	51	23	12	19	116	74
	Dropout	14	33	17	8	14	86	86
	Done	*	*	*	*	*	*	13
Health fields . . .	Continuous	4	13	2	17	1	37	158
	Delayed and interrupted	16	13	5	10	5	49	38
	Dropout	44	4	-	16	4	68	25
	Done	*	*	*	*	*	*	7
Social work	Continuous	*	*	*	*	*	*	11
	Delayed and interrupted	4	7	2	56	13	82	45
	Dropout	8	22	3	11	8	52	36
	Done	*	*	*	*	*	*	10
Psychology	Continuous	13	61	12	18	26	130	301
	Delayed and interrupted	9	29	6	7	52	103	207
	Dropout	22	32	9	19	39	112	150
	Done	*	*	*	*	*	*	10

TABLE A-IV.4--Continued

Men								
Graduate Field	Enrollment Pattern	Career Field					Total Per Cent	N
		Private Company	College or University	Research Institute	Hospital	School System		
Social sciences .	Continuous	12	88	20	9	7	136	56
	Delayed and interrupted	*	*	*	*	*	*	17
	Dropout	*	*	*	*	*	*	16
	Done	*	*	*	*	*	*	1
Mathematics . . .	Continuous	34	66	21	*	2	123	173
	Delayed and interrupted	55	30	13	-	16	114	85
	Dropout	58	36	10	2	6	112	115
	Done	*	*	*	*	*	*	6
Physical sciences	Continuous	48	67	29	1	5	150	626
	Delayed and interrupted	46	38	8	1	23	116	144
	Dropout	52	35	12	1	11	111	202
	Done	62	24	10	-	5	101	21

TABLE A-IV.4--Continued

Women								
Graduate Field	Enrollment Pattern	Career Employer					Total Per Cent	N
		Private Company	College or University	Research Institute	Hospital	School System		
Basic medical sciences . . .	Continuous	21	76	31	7	2	137	42
	Delayed and interrupted	12	67	52	39	3	173	33
	Dropout	*	*	*	*	*	*	15
	Done	*	*	*	*	*	*	2
Other biosciences	Continuous	21	63	28	3	24	139	38
	Delayed and interrupted	*	*	*	*	*	*	16
	Dropout	3	52	29	13	35	132	31
	Done	*	*	*	*	*	*	5
Total biosciences . .	Continuous	21	70	30	5	12	138	80
	Delayed and interrupted	10	65	43	31	14	163	49
	Dropout	2	50	28	17	26	123	46
	Done	*	*	*	*	*	*	7
Health fields . .	Continuous	*	*	*	*	*	*	15
	Delayed and interrupted	-	37	5	56	12	110	57
	Dropout	1	35	7	67	8	118	98
	Done	*	*	*	*	*	*	12
Social work . . .	Continuous	*	*	*	*	*	*	11
	Delayed and interrupted	-	6	4	31	15	56	52
	Dropout	-	6	14	35	2	57	49
	Done	-	5	5	53	9	72	43

TABLE A-IV.4--Continued

Women

Graduate Field	Enrollment Pattern	Career Employer					Total Per Cent	N
		Private Company	College or University	Research Institute	Hospital	School System		
Psychology . . .	Continuous	3	33	8	28	51	123	168
	Delayed and interrupted	6	25	9	16	72	128	231
	Dropout	6	24	6	17	56	109	192
	Done	*	*	*	*	*	*	13
Social sciences.	Continuous	3	75	50	6	14	148	36
	Delayed and interrupted	*	*	*	*	*	*	15
	Dropout	*	*	*	*	*	*	12
	Done	*	*	*	*	*	*	2
Mathematics . .	Continuous	*	*	*	*	*	*	18
	Delayed and interrupted	14	50	9	-	59	132	22
	Dropout	30	17	15	-	33	99	60
	Done	*	*	*	*	*	*	14
Physical sciences . . .	Continuous	32	58	9	4	24	127	53
	Delayed and interrupted	22	56	4	-	56	138	27
	Dropout	54	41	28	13	34	170	71
	Done	*	*	*	*	*	*	6

N . . . 4,371
NA . . 23
Total 4,394

TABLE IV.5

GRADUATE FIELD, SEX, AND CAREER ACTIVITIES
(Percentage Distribution)

Graduate Field	Sex	Career Activity						Total Per Cent	N
		Teaching	Research	Administration	Service	Supervision	Consultation		
Basic medical sciences . . .	Male	74	80	23	18	27	23	245	185
	Female	45	89	1	10	10	10	165	93
Other biosciences	Male	72	72	22	20	24	18	228	250
	Female	86	54	2	6	11	12	171	90
Total bio-sciences . .	Male	73	75	23	19	25	20	235	435
	Female	65	72	2	8	10	11	168	183
Health fields . .	Male	29	20	16	89	20	26	200	229
	Female	73	32	30	80	55	43	313	183
Social work . . .	Male	36	36	73	86	65	71	367	101
	Female	18	20	14	88	44	51	235	151
Psychology . . .	Male	71	44	38	40	29	43	265	652
	Female	70	28	13	36	16	37	200	600
Social sciences .	Male	79	71	36	13	21	29	249	86
	Female	71	58	11	18	12	8	178	65
Mathematics . . .	Male	58	64	28	6	28	38	222	363
	Female	57	45	2	3	14	9	130	111
Physical sciences	Male	61	78	30	6	29	24	228	979
	Female	67	68	1	2	9	10	157	155

N	4,293
NA	101
Total . .	4,394

TABLE A-IV.6

GRADUATE FIELD, SEX, ENROLLMENT PATTERN, AND CAREER ACTIVITIES

(Percentage Distribution)

Men							
Graduate Field	Enrollment Pattern	Career Activity				Total Per Cent	N
		Teaching	Research	Service	Administration		
Basic medical sciences . . .	Continuous	81	86	13	22	202	135
	Delayed and interrupted	63	60	33	20	176	30
	Dropout	*	*	*	*	*	17
	Done	*	*	*	*	*	3
Other biosciences	Continuous	68	85	12	22	187	139
	Delayed and interrupted	79	46	30	14	169	43
	Dropout	64	47	27	24	162	62
	Done	*	*	*	*	*	*
Total biosciences . .	Continuous	74	85	13	22	184	274
	Delayed and interrupted	73	52	31	16	172	73
	Dropout	59	53	28	25	165	79
	Done	*	*	*	*	*	9
Health fields . .	Continuous	30	21	93	8	152	154
	Delayed and interrupted	32	16	88	26	162	43
	Dropout	16	16	64	40	136	25
	Done	*	*	*	*	*	7
Social work . . .	Continuous	*	*	*	*	*	11
	Delayed and interrupted	36	22	89	73	220	45
	Dropout	34	40	74	63	211	35
	Done	*	*	*	*	*	10

TABLE IV.6--Continued

Men							
Graduate Field	Enrollment Pattern	Career Activity				Total Per Cent	N
		Teaching	Research	Service	Administration		
Psychology . .	Continuous	75	56	41	36	208	298
	Delayed and interrupted	75	33	33	30	171	201
	Dropout	60	37	47	51	195	144
	Done	*	*	*	*	*	9
Social sciences	Continuous	89	82	7	24	202	55
	Delayed and interrupted	*	*	*	*	*	16
	Dropout	*	*	*	*	*	15
	Done	-	-	-	-	-	0
Mathematics . .	Continuous	68	78	6	24	176	170
	Delayed and interrupted	52	51	5	36	144	80
	Dropout	47	52	8	24	131	107
	Done	*	*	*	*	*	6
Physical sciences . .	Continuous	68	89	3	28	188	619
	Delayed and interrupted	53	60	7	30	150	143
	Dropout	46	61	10	37	154	198
	Done	*	*	*	*	*	19

TABLE A-IV.6--Continued

Women

Graduate Field	Enrollment Pattern	Career Activity				Total Per Cent	N
		Teaching	Research	Service	Administration		
Basic medical sciences . . .	Continuous	57	90	17	-	164	42
	Delayed and interrupted	26	97	3	3	129	34
	Dropout	*	*	*	*	*	15
	Done	*	*	*	*	*	2
Other biosciences	Continuous	87	58	5	-	150	38
	Delayed and interrupted	*	*	*	*	*	16
	Dropout	84	45	6	3	138	31
	Done	*	*	*	*	*	5
Total biosciences . .	Continuous	71	75	11	-	157	80
	Delayed and interrupted	44	86	4	4	138	50
	Dropout	76	52	4	2	134	46
	Done	*	*	*	*	*	7
Health fields . .	Continuous	*	*	*	*	*	15
	Delayed and interrupted	95	38	78	29	240	58
	Dropout	62	26	78	28	194	98
	Done	*	*	*	*	*	12
Social work . . .	Continuous	*	*	*	*	*	11
	Delayed and interrupted	10	13	94	13	130	52
	Dropout	21	29	71	14	145	48
	Done	15	20	98	12	145	40
Psychology . . .	Continuous	69	41	48	11	169	167
	Delayed and interrupted	81	22	30	14	133	230
	Dropout	62	25	31	10	128	190
	Done	*	*	*	*	*	13
Social sciences .	Continuous	78	69	6	3	156	36
	Delayed and interrupted	*	*	*	*	*	15
	Dropout	*	*	*	*	*	12
	Done	*	*	*	*	*	2

TABLE A-IV.6--Continued

Women							
Graduate Field	Enrollment Pattern	Career Activity				Total Per Cent	N
		Teaching	Research	Service	Administration		
Mathematics . .	Continuous	*	*	*	*	*	18
	Delayed and interrupted	68	32	4	-	104	22
	Dropout	56	44	2	4	106	57
	Done	*	*	*	*	*	14
Physical sciences . .	Continuous	76	74	2	2	154	51
	Delayed and interrupted	78	56	4	-	138	27
	Dropout	58	65	1	1	135	71
	Done	*	*	*	*	*	6

N	4,293
NA . . .	101
Total .	4,394